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BULLETIN No. 109 — 14
ANTHROPOLOGICAL SERIES No. 27

THE MIDDLEPORT PREHISTORIC VILLAGE SITE

BY

W. J. Wintemberg

OTTAWA
EDMOND CLOUTIER, C.M.G., B.A., L.Ph.,
KING'S PRINTER AND CONTROLLER OF STATIONERY
1948 —49

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PREFACE

William John Wintemberg, the author of this volume, died on April 25, 941. From 1911 he had been a valued member of the Anthropological Division f the National Museum of Canada. His two main fields of interest were the rchæology and folk-lore of Ontario. One of his first major undertakings was e excavation, in 1912 and 1915, of the prehistoric Iroquoian village site at oebuck, about 40 miles south of Ottawa. The study of other Ontario sites ollowed, and in 1929 his "Distinguishing Characteristics of Algonkian and roquoian Cultures" was published, the first serious attempt to solve this articular problem in archæology.

This volume is one of a series of reports written by Mr. Wintemberg dis- ussing the results of his excavations at Roebuck, Lawson, and Uren. In a emorandum found among his papers he says that the culture of the Middleport te seems to be in the middle, or transitional, stage of Neutral-Iroquoian culture. he culture of the Uren site was of a still earlier stage, and that of the Southwold arthwork and the Lawson village site of a late, but still pre-European, stage f development.

The manuscript for this bulletin was completed before the death of the uthor, except for a number of bibliographical references that have been upplied by Douglas Leechman. No other manuscripts on archæology from r. Wintemberg's pen now remain unpublished. A bibliography of his papers s to be found in the Annual Report of the National Museum of Canada for 941-1942.

F. J. ALCOCK,
Curator, National Museum of Canada

TTAWA, February 1948

THE MIDDLEPORT PREHISTORIC VILLAGE SITE, BRANT COUNTY, ONTARIO

INTRODUCTION

The Middleport village site, which lies immediately north of the village of Middleport, from which it was named, was situated on the property of the late Dr. Dee, lot 60, con. III, Onondaga tp., Brant co., Ontario, about 11 miles southeast of Brantford. It was excavated by the author from September to October, 1930. The site lies well within the area generally believed to have been occupied by the Neutrals, and was probably inhabited by them.

ACKNOWLEDGMENTS

Permission to excavate the site was obtained from Mrs. Dee through the kindness of Mr. Hilton H. Hill of Brantford, and Col. C. Morgan, Superintendent of the Six Nations Reserve, who gave permission for excavations on the bank of Grand River, south of the Dee property. The clams and other shells were identified by Mr. A. LaRocque of the Geological Survey of Canada. The author was able to identify most of the animal bones by comparison with others that had been identified previously by Dr. Alexander Wetmore, Assistant Secretary, Smithsonian Institution, and Drs. Gerrit S. Miller, J. W. Gidley, and Remington Kellog, and Mr. Earl A. Reid, all of the United States National Museum, Washington, D.C. The map is from a plane-table survey made by the author and the drawings in the text and one of the plates also are by him.

THE SITE

The Middleport site extended about 840 feet east and west and about 280 feet north and south (*See* Figure 1).

AGE

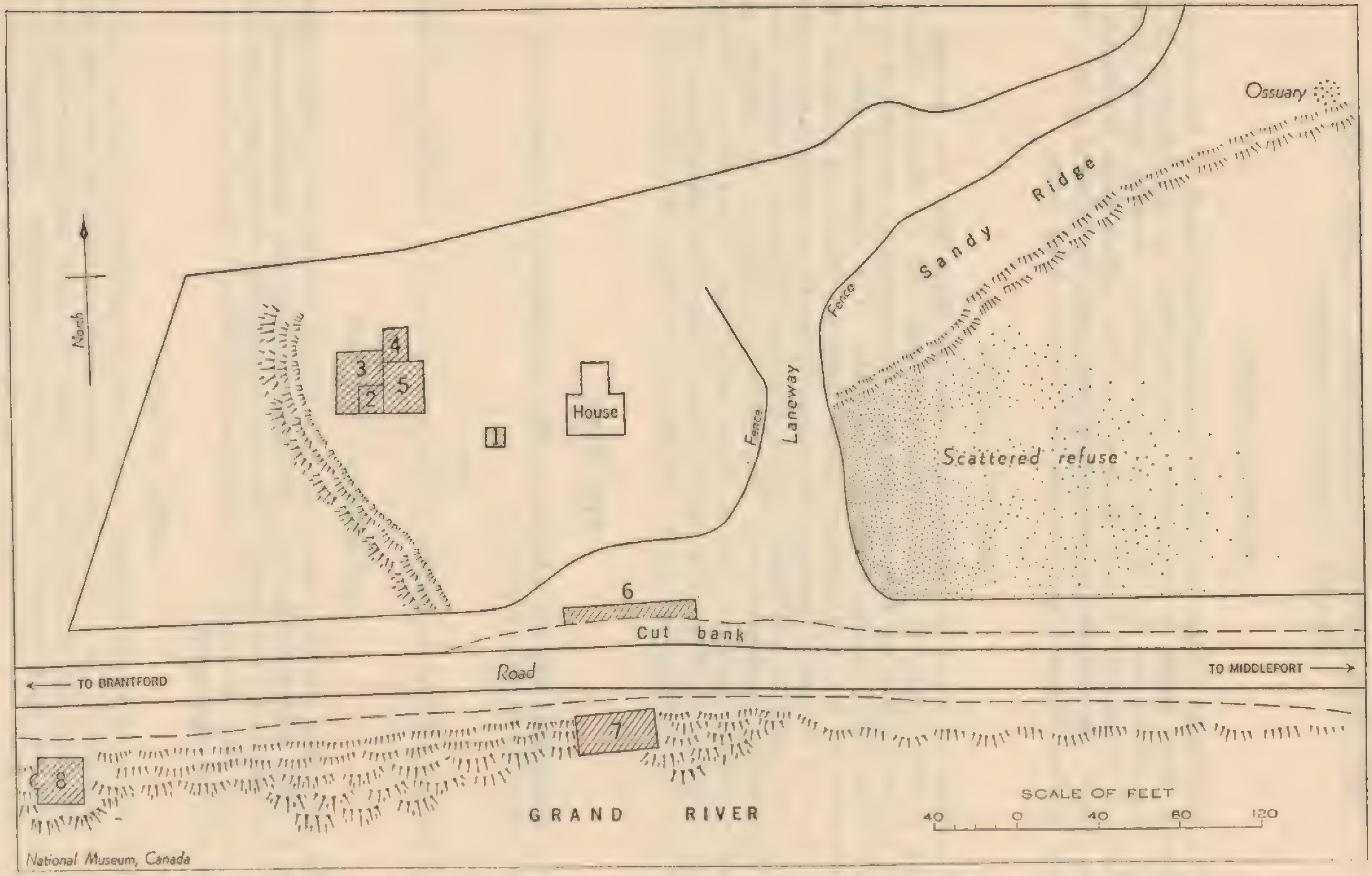
As the site yielded no articles of European origin it is certainly prehistoric.

PHYSIOGRAPHIC FEATURES

The soil along the river bank and a high knoll north of it, which formed part of a ridge that extended in a northeasterly direction across the southern part of the Dee farm, was sandy. The soil immediately to the north consisted of stiff, heavy clay, unsuitable for aboriginal habitation. The river banks have a slope of about 45 degrees.

REFUSE DEPOSITS

There were six refuse deposits, three of which consisted of side-hill dumps; one on a cut-bank in front of the Dee house, which appeared to have been part of one of the side-hill dumps (trench 7) before the road was cut through; and one small and one large deposit in the field west of the house. The depth of the refuse in the small deposit (trench 1) was 2½ feet; that in trenches 2 and 6, 1 foot; in trenches 3, 4, and 5, 18 inches; in trench 7, 3 feet 3 inches; and in trench 8, 3 feet. Part of the large deposit (in trench 4) was excavated by Sir



National Museum, Canada

Figure 1. Map of excavations at Middleport site: lot 60, con. III, Onondaga tp., Brant co., Ont.

Francis Knowles[1] in 1912, who also opened an ossuary at the site. About half of most of the deposits consisted of almost solid ashes. In trench 7 the ashes appeared to be in layers, the top and bottom layers being grey ashes, and the middle white ashes, with a dark streak at the bottom indicating the sod line.

Artifacts did not seem to be confined to any special layer or to the top and bottom of the deposits, the only differences observed being that most of the pottery fragments from the bottom of the deposits were larger than those at the top; in one case large fragments of the major part of a pot (Plate X) were piled on top of one another in a heap.

DEFENSIVE WORKS

In trench 7 there was a row of nineteen post holes extending for about 30 feet east and west, parallel with the river. These ended abruptly at each end, owing to the bank having caved away. Post moulds were not found elsewhere at the site.

RESOURCES AND MATERIALS

We found that the people of the Middleport site depended upon the local natural resources to supply them with food and materials for manufacture; no materials seem to have been brought in from outside the province.

FOODSTUFFS

Plant Foods

Evidences of the use of plant foods were scarce and were confined to about a dozen carbonized corn kernels, which were flattened on the sides and may have been sweet corn, and a carbonized pit of a wild plum. In spite of the lack of more positive evidence, there is no doubt that the inhabitants cultivated other vegetal food besides corn.

Animal Foods

The bones of food animals found in the site were of the following species, in order of abundance: Virginia deer, black or grey squirrel, woodchuck, muskrat, raccoon, black bear, red squirrel, red fox, beaver, chipmunk, moose, mink, porcupine, snowshoe rabbit, fisher, pine marten, grey fox, and lynx. Most of the deer bones were broken into small bits; even such unpromising looking bones as astragali, which could not have produced much nutriment on account of being more or less solid, were split lengthwise. The proximal phalanges, likewise, were split for the sake of the marrow, and the lower jaws also. Ulnæ were mostly broken in the course of separating them from the radii, evidently in preparation for cooking. One scapula shows hacking at the constricted neck, and a few are broken there, this being probably the method used in separating this part of the carcass in some cases.

A few human bones presented a fresh or boiled appearance, which may indicate cannibalism.

Bones of food birds were not as plentiful as those of mammals, but eleven different species were represented, as follows: passenger pigeon (which were more common than those of all other species combined), wild turkey, ruffed grouse, Canada goose, barred owl, mallard, shoveller duck, pintail duck, loon, crow, and flicker.

---

[1] The catalogue numbers of the specimens collected by him run from VIII-F-8723 to VIII-F-8729 and VIII-F-8751 to VIII-F-8874.

Two species of turtle were represented among the bones, most of them consisting of pieces of carapaces and plastrons, although there was also a coracoid, three femora or humeri, and a vertebra of painted and snapping turtles.

There were sixty frog bones, mostly those of the leopard frog, probably.

Fish bones presented some difficulty in their identification, but bones of the following species could be recognized: pike (*Esox lucius*), sand pickerel (*Stizostedion vitreum*), gar pike (*Lepisosteus osseus*), sheepshead (*Aplodinotus grunniens*), lake catfish (*Ameiurus lacustris*), a species of carp (*Carpiodes*), and two species of mullet (*Moxostoma aureolum* and *M. lepidotum*).

There were three crayfish claws, one of which was scorched, probably those of *Cambarus* sp., common in rivers and creeks, whose presence suggested the use of this animal for food, but it was the first time that the author found its remains in a village site.

There were about six hundred shells of freshwater clams, which, given in order of abundance, are as follows: *Elliptio dilatatus, Ligumia recta, Amblema costata, Actinonaias carinata, Elliptio complanatus, Pleurobema cordatum coccineum, Lampsilis ventricosa,* and *Proptera alata,* all species that were probably used for food.

There were shells of three species of land snails: *Polygyra albolabris, Omphalina cuprea,* and *Anguispira alternata,* which may all have been of snails that had crawled into the refuse deposits recently, for most of the shells, especially of *A. alternata*, presented a fresh appearance, with the markings quite distinct. Shells of freshwater snails recovered were those of *Campeloma decisum, Pleurocera acutum,* and *Goniobasis livescens.* There were about three hundred shells of *C. decisum*, of which about one hundred were perforated through the lip, apparently in some cases to facilitate the removal of the snails from the shells. Literally hundreds of shells of *G. livescens*, and what appeared to be immature shells of *P. acutum*, were discovered in trench 9, but the snails seem to have been almost too small for use as food.

MATERIALS FOR MANUFACTURE

The materials used in the manufacture of artifacts were practically the same as those used at other Iroquois sites explored by the author. Exclusive of pottery and earthenware pipes, there was a preponderance of artifacts made of animal materials over those made of rocks and minerals.

Rocks and Minerals

Chert. This material was light grey to dark grey, only a few pieces being white, bluish grey, or black. There were over nine thousand four hundred chert chips, of which only a few showed secondary chipping. There were also a few lamellar flakes (one with one long edge serrated), mostly triangular in cross-section, and 1 inch to 2⅜ inches long, ⅜ inch to ⅞ inch wide, and $\frac{1}{16}$ inch to $\frac{11}{32}$ inch thick, which differed from most similar flakes from Fort Ancient Aspect sites in Ohio in most of them not having parallel edges; these may on occasion have been used as knives, for which their sharp edges were adapted. About two hundred projectile points and knives (Plate 1, figures 1 to 32, 34, 35), eighteen drill points (Plate XIII, figures 6 to 12), seven side scrapers (Plate XIII, figures 13 to 15), twenty-six end scrapers (Plate XIV, figures 3 to 8), and sixty-four crude objects were all wrought from chert.

Iron pyrites. There was a small lump of what may have been decayed iron pyrites that could have been utilized as face paint.

Red ochre. One side of a whetstone bore evidence of having been used to powder red ochre for face paint.

Copper. A thin trapezoidal piece of native copper may have been in process of manufacture into a tubular bead.

Serpentine. The fragmentary monitor pipe in Plate XVI, figure 1, was made of olive-green serpentine.

Slate. Only one artifact was made of this material (Plate XIII, figure 5).

Limestone. Four irregular masses and four pebbles of limestone were made into sinkers (Plate 1, figure 33), a broken slab into a mortar, a pebble into a whetstone, one into what appears to be a combined muller, anvil, and hammer, seven into hammerstones, one into a pendant, two pieces into pipes, both of which were fragmentary (Plate XVI, figure 2), and one into the fragmentary unfinished object of uncertain use (Cat. No. VIII-F-24796) mentioned on page 26.

Greenstone. An unfinished adze was made of this material.

Diabase. An unidentified grey rock, possibly diabase, was made into an adze and a pebble into a hammerstone.

Sandstone. Five pebbles of grey, brown, and reddish sandstone were made into net sinkers, a thin, shaly pebble into a chisel-like tool (Plate XIII, figure 1), three pebbles (Plate XIII, figure 21) and seventeen irregular slabs into whetstones or rubbing stones, two pebbles into sinew stones, six pebbles and an irregular mass into hammerstones, and one into the pitted anvil in Plate XIII, figure 22.

Shale. Eight small flat pebbles were made into pendants, some of which were not completed (Plate XV, figures 1 to 3).

Granite. A piece of granite worked to a roughly quadrangular form was apparently in process of manufacture into an adze.

Gneiss. One pebble of gneiss was made into a net sinker and one into a hammerstone (Plate XIII, figure 20). Crushed gneiss was used as tempering in pottery.

Hornblende schist was made into what seems to have been an ungrooved ax, eleven adzes (Plate XIII, figure 3), two small chisel-like tools (Plate XIII, figure 2), and two objects, sharpened along one side, and apparently used for the same purpose as those illustrated in Plate XIII, figures 4 and 5.

Micaceous schist was made into the sharp-edged tool in Plate XIII, figure 4.

Schist. A rough chisel-like tool and four adzes were made of this material.

Fossils. The only fossil made into an artifact was a short section of an Orthoceras, with a notch on one side (Plate XVIII, figure 7).

Clay. A bed of fine clay in the bank of Grand River was probably the source of this material used in the manufacture of the earthenware pots and pipes found in the site.

Potsherds. Even potsherds were utilized, nine being made into disks, four of which are illustrated in Plate XV, figures 19 to 22.

Materials of Animal Origin

The animal materials used by the people of the Middleport site consisted of bone, antler, teeth, and shell. The feathers of certain species were probably also used. There were no artifacts made of fish or turtle bones; none, either, were derived from human bones.

Bone. Here, as elsewhere in Iroquois sites, deer bone was the favourite material for the manufacture of artifacts. There were eight hundred split pieces of metapodials, two hundred and fifty of tibiæ, sixty of femora, and five of lower jaws, all of which were of a size and shape suitable for transformation into tools like awls; actually, awls were made from about one hundred and sixty split pieces of metapodials (Plate XIV, figures 15 and 21), eighteen of tibiæ, and one of a lower jaw. Two splint bones were made into awls (Plate XIV, figure 9). Five splinters of metapodials were made into crude, pointed tools; and two of a different kind, but also crude, were derived from split pieces of tibiæ. Nine metapodials were cut into longitudinal sections, for manufacture into awls, evidently; the two sections in Plate XVIII, figures 10 and 11, being sufficiently large to produce either four large or eight small awls, as desired. A scapula was used as a scraper, and eleven middle, and one hundred and seventy-six proximal, phalanges were made into what might have been units for cup-and-pin games (Plate XV, figures 15 to 18). Sixteen other bones, transformed into awls, were also probably deer bones, some of which appeared to have been derived from pieces of metapodials.

Worked bear bones and even artifacts derived from them were scarce, there being only two pieces showing cutting, and an awl or punch-like tool derived from an ulna (Plate XIV, figure 14).

Dog bones were less extensively used than at other sites. Two tubular objects, one derived from a tibia, and one from a femur, both with the joints removed, perhaps in process of manufacture into beads (Plate XVIII, figure 16, and Cat. No. VIII-F-24705), and what seems to be a completed bead (Cat. No. VIII-F-24716*b*), an ulna made into an awl, and a tibia (Plate XVIII, figure 17) with the distal end removed, and which may have been some sort of handle, were the only artifacts of dog bone recovered.

Raccoon bones were rarely used, there being only two splanchnic bones (Plate XIV, figures 10 and 11) and an ulna made into awls, and an unfinished object consisting of the left lower jaw with the ascending ramus broken off and longitudinal cuts on the sides (Plate XVIII, figure 8).

A moose phalanx was made into a cup-like object of uncertain use (Plate XVIII, figure 9) and a short section of a rib, probably of this mammal, broken off at each end and with one end rubbed or ground, was probably in process of manufacture into a tool (Cat. No. VIII-F-24944).

Two tibiæ of black squirrels were made into small awl-like tools (Plate XIV, figure 16), and one was in process of manufacture into a flute-like object (Plate XV, figure 32).

An ulna of a lynx (Plate XIV, figure 22) and a radius of a fox (Plate XIV, figure 12) were made into awls.

Besides the bones that it was possible to identify, unidentified mammal bones were made into two large tube-like objects, bone awls (Plate XIV, figures 13, 20, and 23 to 32), and netting needles (Plate XIV, figures 33 and 34), the latter being made from the outer walls of ribs, possibly of the deer.

Bird bones were not extensively used. A few bones of the wild turkey were made into artifacts, including a section of a humerus into a bead (Plate XV, figure 13); one tibio-tarsus into an awl and one into a bead (Plate XV, figure 12); a stock bone in process of being cut into beads; and three tarsimetatarsi into awls (Plate XIV, figure 19) and what seemed to be a section of another into a bead. Among the artifacts derived from bird bones that could not be identified as to species were ten humeri made into beads; three radii made into awls (Plate XIV, figure 17), ten into beads (Plate XV, figure 9), and four into flute-like objects (Plate XV, figures 27 to 30); twenty-three ulnæ into beads (Plate XV, figure 11); and two tibio-tarsi into awls and nine into beads. There were also twenty-two awls that could not be assigned to any particular bones. Among the rejects of manufacture were two proximal and two distal joints of humeri, a proximal joint of a radius, a proximal of a left femur, and a distal joint of a tibio-tarsus of wild turkey, and a joint of the humerus of an unidentified species of bird.

Antler. Although not as extensively used as bone, antler was manufactured into a variety of artifacts, including four arrowpoints (Plate I, figures 36 and 37), two probable unilaterally barbed harpoon points (Plate I, figures 38 and 39), fourteen chipping tools (Plate XIII, figures 16 to 18), two chisel-like tools (Plate XIII, figure 19), five awls (Plate XIV, figure 18), four armlets (Plate XV, figures 23 to 26), a tube-like object, now fragmentary (Plate XV, figure 33), four objects of uncertain use (Plate XVIII, figures 1 to 6, and 12), besides twenty-six pieces exhibiting various processes of manufacture, a few of which are illustrated in Plate XVIII, figures 13 to 15.

Teeth. Judging from the few specimens found, artifacts were rarely derived from teeth. Out of ten beaver incisors only one had the cutting end artificially modified for use as a chisel. There were also only two artifacts made of bear canines, a short section of one being made into a bead (Plate XV, figure 6) and a whole one into a pendant by boring a suspension hole through the root (Plate XV, figure 5).

Shell. Only a few pieces of marine shell were made into discoidal beads, but there were many beads made from shells of the freshwater snail, *Campeloma decisum,* and two of *Pleurocera acutum,* by piercing the lip.

Many half shells of freshwater clams, including those of *Elliptio complanatus, Elliptio dilatatus, Ligumia recta, Lampsilis ventricosa, Amblema costata, Proptera alata,* and *Actinonaias carinata,* had either the ventral margins or posterior ends worn or pointed from use as spoons, scrapers, or pottery formers, the one in Plate XIV, figure 1, being considerably worn and that in figure 2, in the same plate, worn to a point. A left valve of *Amblema costata* had part of the ventral margin, the anterior end, and even the prominent hinge teeth considerably worn. The sides of the right valve of *Elliptio dilatatus,* one left and two right valves of *Actinonaias carinata,* a right valve and one left valve of *Ligumia recta,* and a left valve of *Amblema costata* were used, possibly as pottery smoothers, in some cases until holes were worn through the sides. The inside of a right valve of a shell of *A. carinata* bears a series of irregular criss-cross markings, but it is uncertain how or why they were produced.

IMPLEMENTS USED IN SECURING FOOD

The implements used in hunting and fishing, though abundant numerically, were of only a few different kinds, including chert projectile points and knives, cone-shaped antler points, what were probably fragments of unilaterally barbed harpoon points, and net sinkers. Although implements of bone were more limited in variety, as compared with those from other Iroquois sites, notably Roebuck, chert projectile points greatly exceeded in numbers those found at that site. No artifacts that could have served as fish hooks, or even barbs for compound hooks, were found; no specimens, either, could be definitely recognized as agricultural implements.

CHERT PROJECTILE POINTS AND KNIVES

The chert projectile and knife points, of which there were one hundred and thirty-eight, consisted of four classes: blades of various shapes, triangular points, stemmed points, and notched points.

The first class, which comprised points or blades that were neither triangular nor notched, consisted of the following kinds or types, classified according to shape: one oval (Plate I, figure 29), one oblong, four lanceolate (Plate I, figure 30), ten ovate, three oblanceolate (Plate I, figure 31), two broken but apparently lenticular in outline and pointed at both ends, and one knife-like, with one edge more curved than the other. The majority were whole, well chipped, and lenticular in cross-section, and were from $1\frac{1}{16}$ inches to $4\frac{9}{16}$ inches long, $\frac{15}{32}$ inch to $1\frac{3}{4}$ inches wide, and $\frac{3}{16}$ inch to $1\frac{1}{8}$ inches thick. Five, including a "turtle-back", were so crude that they should probably be classed as rejects, because it was impossible to transform them into more serviceable blades. Some may have been intended for further specialization, such as notching. Evidence of wear on the tip of the smaller end of one lanceolate blade suggests its use as a drill. Two blades, both with the tips missing (one, Cat. No. VIII-F-24367*e*, and the other, illustrated in Plate I, figure 34), were peculiar in having a sort of stem formed by chipping one edge to a shoulder, resulting in a kind of blade reminiscent of certain Solutrean points from Dordogne, France[1], but of which the writer hitherto had not seen any examples from either Canada or the United States. It is possible, however, that in each case it was the intention to chip a shoulder on the opposite edge to form a common type of stemmed point[2]. The oblanceolate blade in Plate I, figure 31, found by Knowles near a burnt burial in the ossuary at the site, was unusual for Ontario and not common elsewhere in Canada and the United States, and was of Woodland origin, probably; the writer found three similar ones near Tadoussac[3], Quebec; one was found at Merigomish, Nova Scotia[4], and one comes from Ontario[5].

The triangular points, more than half with the tips missing, of which there were eighty-six, mostly well chipped and lenticular in cross-section, were $\frac{7}{8}$ inch to $2\frac{1}{4}$ inches long, $\frac{9}{16}$ inch to $1\frac{1}{2}$ inches wide, and $\frac{1}{8}$ inch to $\frac{5}{8}$ inch thick. Of forty-nine points with straight, long edges, sixteen had straight bases (Plate I, figure 5), thirteen convex bases (figures 4 and 6), and fifteen concave bases, and out of thirty-two points with convex edges fourteen had straight bases (figures 2, 8, and 32), one a convex base (figure 4) and ten concave bases (figures 3 and 9). In one case one edge was straight and one convex; in another, one side was steeply or abruptly chipped to an edge. One, fragmentary (Cat. No. VIII-F-24814*a*), had both corners of the base broken off, either accidentally or purposely, to make it conform to a type of point occasionally found in Ontario[6], the Maritime Provinces[7], and New York[8]. One had a flaring base. One (figure 7) was somewhat pentagonal, with about one-third of each side near the bottom more or less straight.

Three small crude chert forms appeared to be abortive attempts to produce triangular points (Cat. Nos. VIII-F-24933*j* and *r*, and VIII-F-24938). The first was roughly plano-convex in cross-section and $\frac{3}{8}$ inch thick; the second, crudely chipped, was $\frac{11}{16}$ inch thick, and the sides of one face of the third, also $\frac{11}{16}$ inch thick, sloped more or less steeply to the edges.

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[1] *See* Wilson, 1899, figs. 15 to 18.
[2] Ibid., fig. 162.
[3] *See* Wintemberg, 1943, Pl. XXV, B, Fig. 10.
[4] *See* Smith, 1929, Pl. IV, fig. 7.
[5] *See* Wintemberg, 1931, Pl. IV, fig. 5.
[6] *See* Wintemberg, 1931, Pl. III, fig. 28, and Pringle, Niagara Peninsula types, Pl. I, fig. 2.
[7] McIntosh, 1913, Pl. I, fig. 8.
[8] Beauchamp, 1897, figs. 1, 18, and 105, and Wilson, 1899, Pl. 33, figs. 3 and 4.

There were six stemmed points, the one in Plate I, figure 35, having what is known as a "turkey-tail" stem. Large spalls broken from both faces of one point (Cat. No. VIII-F-24617) badly damaged the tip. One with the base of the stem indented had a twisted blade (Cat. No. VIII-F-24816). The blades of three of the stemmed points had more or less straight edges, and in three they were convex (Plate I, figure 35). They were from $1\frac{1}{2}$ inches to $2\frac{1}{8}$ inches long, $\frac{13}{32}$ inch to $1\frac{1}{4}$ inches wide, and $\frac{3}{16}$ inch to $\frac{1}{2}$ inch thick.

Thirty-five projectile points had lateral notches, which were either small and shallow (Plate I, figures 10, 11, 13, 15, 17, 18, 22, 23, and 25), or wide, as in five cases (Plate I, figure 28), or, as in eight cases, so deep as to leave narrow necks and wide (in two, extremely wide) tangs (Plate I, figures 19 and 24), the one in figure 19 having the tip of one of the tangs projecting downward as in the so-called "rabbit-ear" tangs seen on certain kinds of points. Most of the points were well chipped and thin, with a lenticular cross-section. One was ridged almost from end to end (Plate I, figure 10); a few were plano-convex. One point (Plate I, figure 27), with part of the base missing, had two notches on each side and might be described as hastate, a type hitherto found in Woodland sites only. Three of the points were wide, short, and thick, the one in Plate I, figure 13, with wide, shallow notches. The edges of the blades of twenty-four of these notched points were straight (Plate I, figures 10 to 12, 14, 15, 19 to 21, 23, and 25 to 28) and those of eighteen others were convex (Plate I, figures 13, 17, 18, 22, and 24). The edges of two points were serrated. The bases of twelve were straight, of nine convex, and of nine concave. The tip of one point was abruptly pointed as in some other points found in Canada[1] and in the United States[2].

Seven points were corner-notched, giving a barbed appearance to five points (Plate I, figures 12 and 26). They were from $\frac{15}{16}$ inch to $2\frac{9}{16}$ inches long, $\frac{1}{2}$ inch to $1\frac{1}{4}$ inches wide, and $\frac{1}{8}$ inch to $\frac{11}{32}$ inch thick.

In one other specimen the notches were made in from the basal edge of the point (Plate I, figure 16), as in points from Georgia, illustrated by Wilson.[3]

CONE-SHAPED ANTLER ARROWPOINTS

Here, as at other Iroquois sites in southwestern Ontario, there were very few antler arrowpoints, only four being found, but none was perfect, one being split, and three otherwise broken. Two of the most nearly complete are $1\frac{7}{8}$ inches and $2\frac{3}{8}$ inches long, respectively, and each $\frac{1}{2}$ inch in diameter, with the sockets in the base of one $\frac{1}{4}$ inch deep and $\frac{11}{16}$ inch in the other. Three had the tips abruptly pointed (Plate I, figures 36 and 37) as in those from the Uren village site[4], whereas one tapered more or less to the tip (Cat. No. VIII-F-24372*a*).

HARPOON POINTS

There were no complete harpoon points, but what appeared to have been basal or rear parts of two antler points, probably unilaterally barbed, one with the line hole intact (Plate I, figure 38) and the other with it broken out (figure 39). One side of the one in figure 38 retained part of the deep cleft that produced the barb. It was half-round in cross-section with the cancellated structure of the antler exposed on the reverse face; it was $\frac{3}{16}$ inch thick. It differed from most harpoon heads from Ontario in having the line hole in the middle of the base rather than close to the side on the barbed edge. The front of the specimen in figure 39 sloped to the base as in some other harpoon points from Ontario[5];

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[1] *See* Wintemberg, 1931, Pl. III, fig. 27.
[2] *See* Beauchamp, 1897, figs. 27, 35, 36, 38, 62, and 91.
[3] Cf. Pl. 38, figs. 22 and 23.
[4] *See* Wintemberg, 1928a, Pl. I, fig. 17.
[5] *See* Wintemberg, 1905, figs. 28 and 30.

it was $\frac{1}{2}$ inch thick. A longitudinal groove extended from the hole to the broken end on the reverse face, perhaps the first step in its transformation into another artifact, after it became broken.

NET SINKERS

Although the Jesuit *Relations* are silent regarding the use of nets[1] for fishing by the Iroquois of this part of southwestern Ontario, there was abundant evidence here, as elsewhere in the area,[2] that they had used nets, which was indicated by the finding of fourteen sinkers. These consisted of oval, oblong, reniform, and irregularly shaped pebbles or masses of limestone, shale, and gneiss, the majority being limestone, with either oblong, half-round, or triangular cross-sections, $1\frac{13}{16}$ inches to $3\frac{15}{16}$ inches long, $1\frac{1}{2}$ inches to $3\frac{1}{4}$ inches wide, and $\frac{1}{2}$ inch to $1\frac{5}{8}$ inches thick. In spite of their irregular shape in some cases the notches were so placed that when attached to the net the minor axis of the sinker remained vertical. One, roughly triangular in cross-section, was notched on the corners, and one (Plate I, figure 33) had a double notch on one side.

PREPARATION OF FOOD

STONE MORTARS

There was only one mortar (Cat. No. VIII-F-24680), but it was fragmentary, and was made by hollowing a $1\frac{3}{8}$-inch thick limestone slab to a depth of $\frac{1}{2}$ inch and smoothing it, unless it was worn smooth from use. The lower face was rough and uneven.

MULLERS

There was a scarcity of mullers, there being only one fragment and one whole one; the latter appeared to have been used also as a hammer and anvil.

POTTERY

There was one whole pot (only a small cup-like vessel, however), over nineteen thousand body fragments, about two-thirds of which were very small and, therefore, not studied, and two thousand and forty-one rim pieces, belonging to one thousand eight hundred and thirty-eight pots. There were about one hundred and fifty small, crude vessels, possibly toys made by children or by persons inexperienced in pot making. Many of these were broken into small bits and their shapes were uncertain.

The pots ranged in size from very crude small vessels from $1\frac{1}{16}$ inches to $2\frac{5}{8}$ inches to larger vessels from about $4\frac{1}{4}$ inches to 20 or more inches across the bilge (Plate X).

The pots appear to have been of four different shapes: cup-like; with flaring lips; with rims smaller than the body and rising vertically from the shoulder; and with overhanging collars. Among the small, crudely modelled toy vessels were two saucer-shaped specimens, one of them (Cat. No. VIII-F-24572*d*) fragmentary, with a hollow $\frac{1}{4}$ inch deep; and the other (Cat. No. VIII-F-24486*e*) somewhat conical, $1\frac{1}{4}$ inches in diameter across the top and $\frac{3}{4}$ inch high, with the hollow $\frac{11}{16}$ inch in diameter and $\frac{5}{16}$ inch deep.

None of the pots had handles. The shape of a $\frac{5}{8}$-inch long fragment of a curved earthenware object, $\frac{3}{16}$ inch in diameter, suggests that it was the handle of a small pot.

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[1] "The men", among the Hurons, says Champlain, "make nets for fishing" (III, p. 183).

[2] *See* Wintemberg, 1939, p. 17, and Pl. III, fig. 20.

As compared with pots from other Iroquois sites, where they are common, there were only eight pots with spout-like lips (Plate III, figure 17, and Plate VIII, figures 6 and 7). One (Plate III, figure 18) had the angle of the lip considerably thickened, with a cross-section like that in Plate XII, figure 15.

One hundred and ninety-two pots had peaked elevations on the rims, which were low in one case and close together in another (Plate V, figure 7). The peaks were rounded on sixteen rims (Plate V, figures 1, 15, 22, and Plate VII, figures 8, 15), pointed on one hundred and twenty-eight (Plate III, figures 3, 4, 8, 17; Plate IV, figures 3, 4, 8, 10, 13, 19; Plate V, figures 5, 12, 20; Plate VI, figures 2, 8, 12; Plate VII, figures 1 to 5, 11, 14; Plate VIII, figures 1 to 7; and Plate X).

Owing to the broken condition of the rims and many parts being missing, it was impossible to be certain of the number of pots that had round, oval, or ovate mouths. The majority appeared to have had round mouths. The pots with peaked elevations on the rims or with spout-like lips were either ovate or oval, depending upon whether there was a peak at one end only, or a peak at each opposite end.

The cross-sections of the rims varied in shape (*See* Plate XII) and there were all the gradations from simple (figures 1, 2) to rolled (figures 3, 4), and from that again to the over-hanging rims (figures 54, 58 to 60, 65, 66, 69 to 75, 79, 83), the latter being so common at sites of the late pre-European period in southwestern Ontario. A few had cross-sections unlike any others the author had seen (figures 15, 17 to 21, 28, 37, 38, 43, 48, 49, 63, 74, 77, 81, 84). Most rims had cross-sections like that in figure 22; many were like that in figure 39.

The shapes of the lip edges of the rims varied. They were round as in Plate XII, figures 1 to 5, 7 to 9, 11, 46, 51, on thirty rims; squared like those in Plate XII, figures 30, 38, 43, on three hundred and eighty rims; sloped to the outside on five hundred and twenty-seven rims (Plate XII, figures 21, 35, 41, 49, 72, 75), and to the inside on two hundred and ninety others (Plate XII, figure 67). The outer angles of the lips were rounded on seven rims and the inner angles on sixteen; eight rims had both outer and inner angles rounded. The lip edges of fifteen rims were either slightly or deeply grooved lengthwise; Plate XII, figure 74, shows the cross-section of one rim with a deep groove. Eight rims had flanges on the inside angle of the lip, and there were flanges on the outside and inside of the lips of six rims.

The overhanging collars were from $\frac{7}{16}$ inch to $3\frac{3}{4}$ inches high.

One of the necks can be described as deeply constricted; none of them was high.

The shoulders were of several different shapes in cross-section (*See* Figure 2). Eighty-four shoulders had both outside and inside surfaces more or less parallel, as in *a*, fifty-two were like *b*, two like *c*, one like *d*, and nine like *e*. Forty-five were distinctly carinated, fifteen with the body below the ridge convex as in *f*, and thirty more or less straight as in *g*.

Body pieces were from $\frac{1}{8}$ inch to $\frac{7}{8}$ inch thick, but there were almost four times as many pieces $\frac{1}{4}$ inch to $\frac{1}{2}$ inch thick as there were pieces less than $\frac{1}{4}$ inch and more than $\frac{1}{2}$ inch. Very few pieces were either extremely thin or thick. The rims varied in thickness from $\frac{3}{16}$ inch to $\frac{23}{32}$ inch, most of them being between $\frac{11}{32}$ inch and $\frac{15}{32}$ inch.

The surface finish of the outside and inside of the pots varied; eight hundred and eighty fragments being smooth[1], thirteen uneven, and one thousand rough, the roughness being due in some cases to the surface having been scraped after the paste had become partly hardened. The inside surface of about two thousand fragments was smooth; on about three thousand four hundred it was rough; and on about one hundred and fifty fragments it was uneven, principally at the junction of the necks with the shoulders.

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[1] By *smooth* the author means *smooth to the touch*, and not, as used by some writers, in the sense of *even*, because according to their usage *smooth* would include pieces with even surfaces, rough surfaces, or granular surfaces.

The outside of one hundred and eighty-two fragments was crackled, the cracks in some cases radiating from coarse pieces of non-plastic either just below or protruding from the surface.

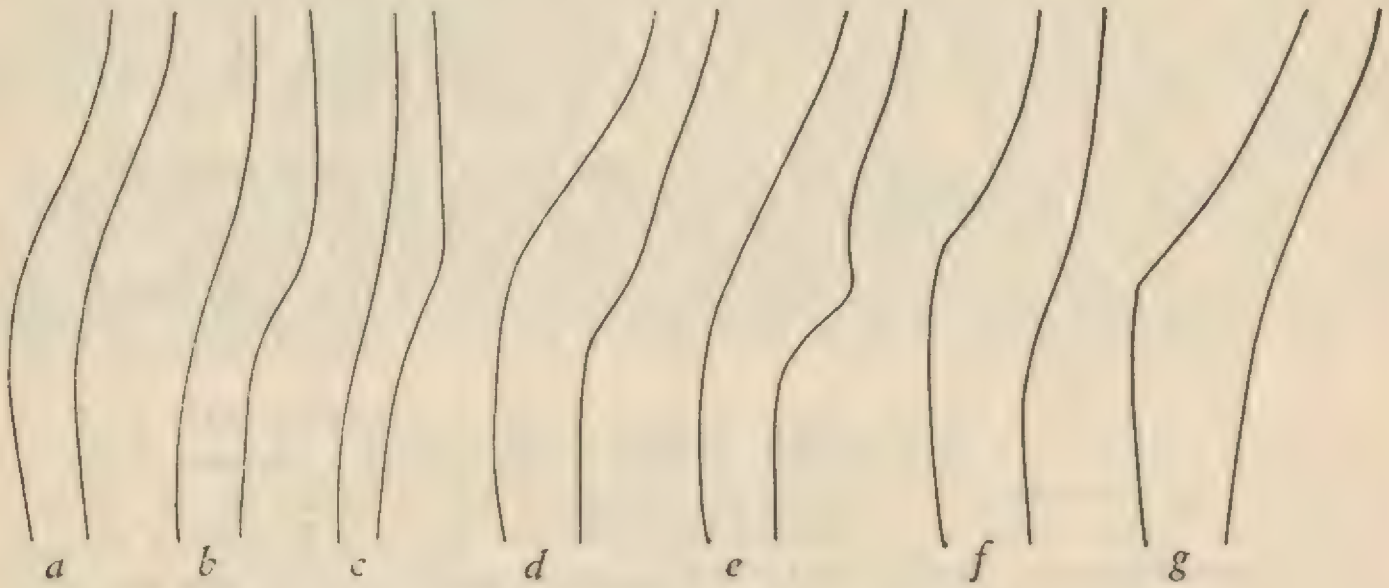

Figure 2. Cross-sections of shoulders of pots.

The colours varied on outside and inside surfaces of the pots. Four thousand one hundred and forty-two fragments showed various shades of red on the outside (of which seventeen were terra cotta), two thousand and twelve various shades of grey, and eighty-six black. The inside of most pieces (one thousand nine hundred and thirteen) was grey, of one thousand seven hundred and forty-two, red, and of one thousand four hundred and fifty, black. As at other sites, some of the pottery presented a mottled appearance.

All pots, with the exception of about one hundred and thirty (and these principally small, crude vessels), were decorated. One thousand and seven were decorated on the outside of the rim only, eight on the lip edge only, one hundred and twenty-two on the lip edge and outside only, two hundred and nine on the outside and inside only, and thirty-three on the outside, inside, and on the lip edge. One hundred and eighty-three bore decoration on rim and neck, but the necks were mostly devoid of decoration, except in cases where that on the rim extended downwards into the neck, or where its decoration formed part of that on the rim (*See* Plate III, figure 19). Only a very few appeared to have been decorated on both rim and shoulder; in fact there were few decorated shoulders, about one hundred and ten, as compared with their commonness at the Roebuck Village site, where there were one thousand and fifteen. There was no all-over decoration. It was noted that most of the rims, which were decorated with vertical or diagonal lines only, bore no decoration on the lip edges, inside, or on the necks.

Many of the pots were probably used in cooking. Only a few fragments, however, showed the carbonized encrustation on the inside of the rim, usually regarded as evidence of use for culinary purposes.

None of the fragments gave a hint as to the method of manufacture of pottery. Although none of the broken edges suggested by their appearance that the fragments were parts of coiled pots, there were a few fragments of baked cylindrical objects of earthenware that appeared to be parts of coils, one being a small curved piece about $\frac{5}{8}$ inch long and $\frac{3}{16}$ inch in diameter, with a circular cross-section (Cat. No. VIII-F-8817).

A few of the small toy pots appeared to have been made of clay alone, but all the larger pots were grit tempered; none was shell tempered. The grit tempering consisted mainly of gneiss of three grades, determined visually as fine, medium, and coarse, but the sizes were by no means uniform in any one piece. The particles of fine tempering were from $\frac{1}{32}$ inch to $\frac{1}{16}$ inch in diameter, those of medium tempering were a little more than $\frac{1}{16}$ to $\frac{3}{32}$ inch in diameter. Any particles larger than this were considered coarse, and included pebbles up to $\frac{1}{2}$ inch long. One thousand one hundred and fifty-eight fragments were found to contain fine, four thousand three hundred and seventy medium, and six hundred and seventy-nine coarse tempering. Very little of the tempering showed through the surface, unless it was very coarse or consisted of flakes of mica. One fragment contained a piece of a carbonized twig about $\frac{3}{16}$ inch in diameter, and one a $\frac{1}{4}$-inch fragment of freshwater clam.

The broken edges of two thousand one hundred and twenty-seven fragments, of which many contained fine tempering, were of a uniform colour. One thousand and eighty had a dark core in the middle, indicating that the pots had not been baked as thoroughly as those in which the colours of the broken edges were uniform. The edges of two thousand six hundred and thirty-five fragments presented two colours or layers, the one next to the inside surface being darker than the outside layer, probably owing to the absorption of grease in cooking or because the inside had been treated to hold water.

The surface hardness of four thousand six hundred and sixty fragments was determined by the method suggested by March. Most of the pieces, two thousand five hundred and ninety-seven, were 2·5, six hundred and six were 2, one thousand and seventy-four 3, one hundred and eighty-five 3·5, one hundred and seventy-nine 4, and nineteen 4·5. Many of the pieces were slightly harder on the inside than on the outside, perhaps because the inside had been treated to make it impervious to water. The outside of many of the soft pieces presented what may be termed a "mealy" appearance. Pieces that were grey outside were harder than those that were red. Most of the corrugated pieces appeared to be harder than the smooth pieces.

Vestiges of, or the marks left by, various tools employed in malleating the outside of the pots, remained on many pieces. Thus, one hundred and eight fragments appeared to have been cord-roughened (Plate II, figure 1, and Plate VII, figure 15), although this is doubtful in a few cases. A few pieces presented what might be called a pseudo-cord-roughened effect, but it was uncertain how the markings were produced (Plate II, figures 2, 4, 5, 10, the last partly smoothed). In several pieces the surface had been smoothed in horizontal bands, as on the fragment in Plate II, figure 2, perhaps for decorative effect. As compared with the many pieces from the Uren site, only nine from Middleport bore chequered paddle markings, but the chequers were mostly rectangular (Plate II, figures 9, 13, 17). More than two thousand four hundred body pieces, including even a few of small vessels, had the outside surfaces ribbed or corrugated, with the grooves mostly horizontal, but, in a few cases, either vertical, diagonal, or cross-hatched, a few of the last with fine grooves crossing wider ones at right angles. In most cases the bodies of the pots alone were corrugated, because those in the neck had been obliterated by smoothing. In fact, the surfaces of the whole pots were smoothed in some cases. One piece showed what looked like ribbed marking on the inside. About six hundred and eighty-five of the corrugated pieces appeared to have been scarified, either with comb-like tools or twig brushes, judging from the striæ in the bottoms of the grooves

(Plate II, figures 5 and 14). Other corrugations, but with no trace of striæ, on over seventeen hundred pieces, were probably produced with ribbed paddles, for if a comb-like tool had been used, particles of grit, dragged along by the teeth of the combs, would inevitably have left striæ. The bottoms of the grooves, on the contrary, presented the same smooth appearance as the surfaces of the ridges between the grooves. In other cases the bottoms of the grooves were rough or rippled, which was due probably to the soft paste being raised by suction each time the paddle was drawn away. That the corrugations were produced with ribbed paddles became more evident when the grooves on the cross-hatched pieces were examined, for in these there was no dragging of bits of clay from one groove to another observable, such as would have been the case had comb-like tools been drawn at right angles across other grooves made previously. Then, too, in cases where the ends of the grooves showed up distinctly, they commenced squarely, leaving no doubt that they were made by the impact of a paddle and not by a dragging operation. The bottoms of the grooves were either concave (Plate II, figures 3 and 7) or flat (Plate II, figure 6) and $\frac{1}{16}$ inch to $\frac{7}{16}$ inch wide (Plate II, figure 7), but none was more than $\frac{3}{16}$ inch deep. It was not certain how the markings on the outside of two hundred other body fragments were made (Plate II, figures 2, 8, 11, 12, 15).

Thirty-five body pieces were scarified on the inside.

Decorative processes comprised modelling, punching, impressing, stamping, trailing, and incising.

The rims, especially those with peaks and overhanging collars, were modelled into shape. In one case a piece of clay was added to the rim by luting, apparently, to make the outside convex vertically (Cat. No. VIII-F-24493*a*).

Punching can be seen on a few rim fragments (Plate VII, figure 10), especially from the inside of three rims to produce nodes on the outside. In one piece (Plate XI, figure 6), void of other decoration except pseudo-cord-roughening, but which was of Woodland origin, possibly, there was a row of punched holes each $\frac{1}{8}$ inch in diameter, $\frac{9}{32}$ inch deep, and $\frac{3}{4}$ inch below the lip edge, with nodes on the outside about $\frac{1}{16}$ inch high. There were two horizontal rows of punched holes on the inside of a neck fragment (Cat. No. VIII-F-24967*x*), the holes in the upper row being $\frac{5}{32}$ inch in diameter and $\frac{5}{8}$ inch apart, and those in the second row, which was $\frac{5}{8}$ inch below the first row, $\frac{3}{32}$ inch in diameter and $\frac{1}{4}$ inch apart. Only the holes in the upper row, however, produced nodes on the outside. In the third case the holes, each $\frac{3}{16}$ inch in diameter, and $\frac{3}{8}$ inch deep, were $\frac{3}{8}$ inch apart in a row $1\frac{1}{8}$ inches below the lip edge. In addition to those just mentioned there were five rims in which the holes failed to produce nodes; in one (Cat. No. VIII-F-24495*a*) the holes, $\frac{9}{32}$ inch in diameter, $\frac{3}{8}$ inch deep, and $1\frac{7}{16}$ inches apart, were in a row $1\frac{3}{16}$ inches below the lip edge, and in another (Cat. No. VIII-F-24883*a*) the holes were oval, $\frac{3}{8}$ inch by $\frac{5}{16}$ inch in diameter, $\frac{7}{16}$ inch deep, and $1\frac{5}{8}$ inches apart, in a row $\frac{5}{8}$ inch below the lip.

Impressed decoration was produced with tools of various kinds and shapes. Thus, antler tines with rounded tips could have been used to produce either circular, oval, or ovoid impressions like those in Plate III, figure 3; Plate IV, figures 1, 17; Plate V, figures 10, 19 (along bottom in both cases); Plate VI, figures 9, 13; Plate VII, figure 3 (along bottom); and Plate VIII, figure 2 (also along bottom), depending upon the angle at which they were held when used. The kinds of tools used to make some of the other impressions on pottery illustrated were uncertain (Plate III, figure 1 (on lip edge), 4, 6 to 8, 11, 14, 15, 19 (lower row); Plate IV, figures 4 to 7, 8 (lower row), 9, 11 (lower row), 14 (lower row), 16 (upper row), 19; Plate V, figures 3, 5 to 7, 9, 15 (lower row); Plate VI, figures 9, 11 to 14; and Plate VII, figures 4 (along top) and 7). The notches on the outer and inner angles of the lip edges of some rims (Plate V, figure 8) seemed to have been made by pressing into the clay a tool with an angular cross-section. The corners of the ends of similar tools were perhaps used to produce triangular impressions like those on the rim fragment in Plate V, figure 22. Finger nails were used to make semicircular impressions on seven rims (Plate IV, figure 3, and Plate VI, figure 4).

Stamped decoration could be seen on a few decorated rims. The markings on those in Plate IV, figure 2, and Plate V, figure 8, looked like impressions made with a rocking stamp, or with a notched piece of wood used end-on like a stamp. Some of the diagonal grooves were not produced by trailing as was the case with most linear markings, but appeared to have been stamped (if not produced with a rocking stamp), because minute diagonal ridges were perceptible in the bottom of the grooves, as if they had been made by pressing a twisted, but not fibrous, thong into the clay (Cat. No. VIII-F-24477*a*). Only a few pots bore stamped circles, in one case in triangular groups (Plate IX, figure 1), and in another in a row below the lip edge (Plate III, figure 5).

Most of the linear marking were made by trailing. They were $\frac{1}{16}$ inch to $\frac{1}{4}$ inch in diameter, and some were as deep as they were wide. Designs composed of wide, deep grooves are seen in Plate VI, figures 2, 4, 7.

There were a few interrupted lines or grooves like those on some of the pottery from the Uren site (Plate V, figure 2).

There were only a few rims with incised linear decoration.

Eighteen body fragments had conical holes drilled near the broken edges for repairing the pots by drawing the cracked pieces together by lacing with a thong of green sinew (Plate X).

WOODLAND POTTERY

Besides the Iroquois pottery, one hundred and forty-eight fragments of Woodland pottery were found in trenches 1, 2, 4, 5, 6, and 7, the majority being from trench 7. In at least two trenches (1 and 2) the fragments rested on the undisturbed sand at the bottom of the refuse, the one in trench 1 being $2\frac{1}{2}$ feet deep, and so probably left by a Woodland people before the Iroquois inhabitants arrived. In trench 7 the pottery was found at the western edge of the deposit, where it occurred in association with Iroquois artifacts and pottery.

There were one hundred and twenty-five body pieces and twenty-three rims representing about eighteen pots (Plate XI, figures 1 to 15).

A few of the pots appeared to have had nearly straight sides, with the lips slightly everted; fourteen had flaring tops (*See* cross-sections in Plate XII, figures 78, 88, 89, 90). Nineteen rims had peaked elevations (Plate XI, figure 2). One had a rounded base and one a pointed one.

The lip edges of some of the rims were rounded (Plate XII, figure 78). In one it was squared off (Plate XII, figure 88); and it sloped to the outside on thirteen rims (Plate XII, figure 89).

Body pieces ranged in thickness from $\frac{1}{4}$ inch to $\frac{15}{16}$ inch, but most of them were between $\frac{1}{4}$ inch and $\frac{7}{16}$ inch thick. The rims varied in thickness from $\frac{1}{4}$ inch to $\frac{7}{16}$ inch, most being $\frac{11}{32}$ inch and $\frac{15}{32}$ inch.

The inside surfaces of some of the pieces were rough. The outside surfaces of sixty-one pieces were cord-roughened (Plate XI, figure 10).

Eighty fragments were red, brown, or tan in colour on the outside, fifteen were grey, and five black; whereas, on the inside fifty-eight were red, thirteen grey, and nineteen black.

Most of the pottery was decorated; twenty-four pots may have had all-over decoration. A few of the lip edges and the inside of twelve rims were decorated.

The method of manufacture of the pottery was uncertain. None of it appeared to be coiled and so may have been modelled from a mass of clay. Crushed gneiss was used to temper the clay. Forty-six fragments contained fine, forty-two medium, and one coarse tempering.

The insides of two fragments were scarified and two others showed paddle markings (Plate XI, figure 7).

The appearance of the broken edges gave an idea of the thoroughness of the burning or baking. Thus, thirty pieces, with the broken edges of a uniform colour, indicated that the ware had been well baked. Twenty-five pieces had a dark core in the middle, a characteristic of wares not having been thoroughly baked. Twenty-four pieces showed two layers, the one next to the inside surface being darker than the outer layer, which probably resulted from use in cooking; if not, from a process designed to make the pot impervious to water.

The surface hardness of the pottery ranged from 2 to 3, a few being 2, seventy-six 2·5, and seventeen 3.

The decorative processes were impressing, stamping, and punching. Impressions on thirty rims were produced with cord-wound straight rods or twigs (Plate XI, figures 1 to 4, 8, 13 to 15), or with cord-wound loops used end-on as stamps (Plate XI, figures 9, 11), as in three pots. Ten rims were decorated by punching conical holes $\frac{3}{32}$ inch to $\frac{3}{16}$ inch in diameter, from the outside, which formed rounded nodes on the inside (Plate XI, figures 1 to 4, 9, 15).

TOOLS USED BY MEN

The tools used by men in the kinds of work usually performed by men among Indians consisted of two possible ungrooved stone axes, stone adzes, stone, antler, and beaver incisor chisel-like tools, whetstones, sinew stones, side scrapers, points for drills, antler flaking tools, hammerstones, and anvils.

UNGROOVED STONE AXES

Two fragments of what appeared to have been ungrooved axes, both of hornblende schist, and symmetrical as viewed from the narrow side, may have been adzes.

STONE ADZES AND CHISEL-LIKE TOOLS

There were twenty-one fragments and eight whole, or nearly whole, adzes made of hornblende schist, schist, micaceous schist, greenstone, shale, or sandstone, and an unidentified variety of hard grey rock. They varied in length from $1\frac{9}{32}$ inches to $3\frac{13}{16}$ inches, in width from $\frac{3}{4}$ inch to $1\frac{7}{8}$ inches, and in thickness from $\frac{3}{16}$ inch to $\frac{11}{16}$ inch.

The poll was left in the rough in a few cases, especially that in Plate XIII, figure 2, which was well finished otherwise. In cross-section they were elliptical, oblong, rectangular, and half-round. The cutting edges were mostly convex; that of the chisel-like object in Plate XIII, figure I, was formed by grinding from both faces. The one illustrated in Plate XIII, figure 4, was rather a curious specimen with a sharp cutting edge, and was perhaps not an adze. It was half-round in cross-section and $\frac{17}{32}$ inch thick.

Four specimens were probably unfinished adzes. A spatulate splinter of schist $2\frac{7}{16}$ inches long, $1\frac{1}{8}$ inches wide, and $\frac{1}{4}$ inch thick, triangular in cross-section, with the broad end brought to a rounded cutting edge (Cat. No. VIII-F-24382), but with the rest of the implement unsmoothed, was probably unfinished. One fragment of an adze (Cat. No. VIII-F-24822*c*), broken in two lengthwise, was battered on the sides as if it had been in process of being refashioned into another adze. There was also one unfinished adze of slate or greenstone, 4 inches long, $2\frac{9}{32}$ inches wide, and about 1 inch thick, which had been chipped into shape but not rubbed (Cat. No. VIII-F-8788*b*). What was intended for the blade end was missing and this probably led to its rejection. A fourth specimen (Cat. No. VIII-F-24823), about $3\frac{1}{2}$ inches long, $2\frac{1}{2}$ inches wide, and $1\frac{1}{2}$ inches thick, which may have been either an unfinished adze, although perhaps too wide, or a hammerstone, consisted of a spall from a boulder of red granite, with the waterworn surface intact on one face, the edges trimmed off round, and the fractured face smoothed by rubbing.

ANTLER CHISEL-LIKE TOOL

The antler tine with the tip rubbed to a fairly sharp, almost straight, $\frac{3}{8}$ inch wide cutting edge, and the large end hollowed to a depth of $\frac{13}{16}$ inch, as if for the reception of a wooden handle, illustrated in Plate XIII, figure 19, may have been used as a chisel. The cutting end of one other specimen, also of antler (Cat. No. VIII-F-24828*b*), was considerably polished from use.

BEAVER INCISOR CHISEL

Only one beaver incisor (Cat. No. VIII-F-24383), with the natural slope of the cutting end artificially accentuated for use, perhaps as a chisel, was found.

WHETSTONES

There were twenty-five whetstones or rubbing stones consisting mainly of irregular slabs of grey, red, and brown shale or sandstone, $1\frac{9}{32}$ inches to $3\frac{5}{8}$ inches long, $1\frac{1}{16}$ inches to $3\frac{3}{8}$ inches wide, and $\frac{3}{16}$ inch to $1\frac{5}{16}$ inches thick, the majority with only one face smoothed from use. A few were only slightly used; one was deeply hollowed. Two were derived from pebbles, one of which, a split piece, had the fractured face smoothed.

A fragment of a spatulate limestone pebble with narrow or linear grooves on one face, and the one $\frac{7}{8}$ inch thick in Plate XIII, figure 21, with a deeper groove, were used probably to sharpen stone tools and the tips of bone awls.

The flat face of one specimen was covered with red pigment, which suggests that it was used perhaps to grind red ochre into powder for use as face paint.

SINEW STONES

There were two so-called sinew stones (Cat. No. VIII-F-24829*a*,*b*), one of which, broken, was an oblong shale pebble, lenticular in cross-section and $\frac{13}{16}$ inch thick, with abraded areas on both long edges. The other, also a fragment of a red shale pebble, oblong in cross-section, and $\frac{11}{16}$ inch thick, had the whole of one edge abraded.

SIDE SCRAPERS

What may be classed as side scrapers consisted of seven either roughly oval, oblong, ovoid, or irregularly shaped chert chips, $\frac{1}{8}$ inch to $\frac{1}{4}$ inch thick, retaining the original plane of fracture on one face, and with one or both long sides trimmed to a narrow, steeply bevelled edge. One had one edge more curved than the other (Plate XIII, figure 13), and two had one edge incurved (figures 14 and 15 in the same plate). These were probably used to scrape antler, bone, and wooden objects into shape.

DRILL POINTS

The chert drill points from the Middleport site were of four kinds. The first consisted of crude chert chips with pointed ends, the second of chips that had been purposely chipped to a point, the third of specially chipped and well-finished drills, and the fourth of arrowheads used as drills. A specimen of the first class, of which there were two, illustrated in Plate XIII, figure 9, was $\frac{9}{32}$ inch thick; the other (Cat. No. VIII-F-24678*a*) was $1\frac{1}{4}$ inches long by $1\frac{1}{4}$ inches in diameter and $\frac{7}{32}$ inch thick. There were seven drills of the second class (Cat. Nos. VIII-F-24378*e*, *f*, *j*, VIII-F-24531*c*, and VIII-F-24932*r*) and two of them are illustrated (Plate XIII, figures 8 and 11). Most of these drills are crude. The one in figure 11 was triangular in cross-section, and besides the chipping of the tip was trimmed along one of the edges, and that in figure 8, which retained the original plane of fracture on one face, was steeply flaked to form a slender, sharp tip, which was not worn from use. A slender piece of chert, triangular in cross-section, seemed to have been in process of manufacture into a drill of this kind. Most specimens of the third kind were fragmentary. They were from $\frac{3}{16}$ to $\frac{5}{16}$ inch in diameter. The base of one was wedge-shaped, possibly for insertion in the split end of a drill shaft; five (Plate XIII, figure 10) were slender tip fragments, and the one in Plate XIII, figure 7, semed to have been double pointed. There were three points made from arrowheads, one (Plate XIII, figure 6) being stemmed; the second laterally notched (Cat. No. VIII-F-24378*c*), $1\frac{1}{32}$ inches long, $\frac{1}{2}$ inch wide, and $\frac{3}{16}$ inch thick; and the third, $\frac{1}{4}$ inch thick, uncertain, because fragmentary (Cat. No. VIII-F-24953*a*). Some of those with broad or winged bases may have been worked gimlet-fashion, held between the thumb and forefinger. The crude specimen, $\frac{3}{8}$ inch thick, illustrated in Plate XIII, figure 12, appeared to have had an attenuated tip, and the bottom edge of the base was considerably worn as if it had been used to drill the bowl cavities of stone pipes[1].

ANTLER FLAKING TOOLS

There were fourteen antler flaking or chipping tools, four of which were fragmentary, from $2\frac{1}{16}$ to $3\frac{1}{16}$ inches long, $\frac{5}{16}$ inch to $\frac{13}{16}$ inch wide, and $\frac{3}{16}$ to $\frac{5}{8}$ inch thick, and either half-round, oval, or oblong in cross-section, the majority being oval. The upper end was usually flattened, owing to the impact of hammer or mallet blows, and the lower end conoidal, one being extremely so (Plate XIII, figure 17). The one in Plate XIII, figure 18, was of nearly uniform diameter from end to end; the one in figure 16, in the same plate, with the lower end slivered from use, the thickest. One was cut in half (Cat. No. VIII-F-24677*b*); two were split in half lengthwise (Cat. Nos. VIII-F-24538*a* and VIII-F-24619*a*, the former curved lengthwise); and one had deep scars on one face, possibly from use as a pressure flaker. The pointed, fragmentary antler object in Plate XVIII, figure 5, may also have been used as a flaker.

HAMMERSTONES

Hammerstones were of two kinds, one consisting of oval, ovoid, oblong, cordiform, reniform, or irregularly shaped pebbles of limestone, shale, sandstone, or gneiss, with marks of battering on the sides and edges only, as in nine speciments, and the second consisting of circular or oval pebbles with either a pit on one side only, as in one specimen, or with a pit on two opposite sides, as in five specimens. The one illustrated in Plate XIII, figure 20, was battered at each end and on four sides. Two fragments of stone adzes, one a poll end with deep pits on the front (Cat. No. VIII-F-24822*a*), and the other with the fractured end of the shaft considerably battered (Cat. No. VIII-F-24822c), and a worked granite spall (Cat. No. VIII-F-24823), mentioned on page 17 as possibly an unfinished adze, may have been used as hammers also. Five chunks of worked chert of the same shape as some of those from Woodland sites, classed as hammers, from $1\frac{5}{16}$ inches to $2\frac{1}{32}$ inches long, $\frac{15}{16}$ inch to $1\frac{13}{16}$ inches wide, and $\frac{11}{16}$ inch to $1\frac{1}{8}$ inches thick, may have been intended for use in battering stone tools into shape.

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[1] A somewhat similar chert object, but not so nearly complete, was found in the Uren site (*See* Wintemberg, 1928a, Pl. XIX, fig. 12).

STONE ANVILS

There were three pitted stone anvils or chipping blocks. The one illustrated in Plate XIII, figure 22, is of sandstone, 1 inch thick, with pits on both faces. The notches on two edges suggested secondary use as a net sinker. The second specimen (Cat. No. VIII-F-24826), of a material like limestone, had the top flattened and scarred, with a pit in the centre. Its flattened face suggested previous use as a muller, and the pit may be the result of use as a hammer. The third specimen (Cat. No. VIII-F-24820*a*), a slab of shale about 4 inches in diameter, and $1\frac{1}{4}$ inches thick, had a wide pit about $\frac{1}{8}$ inch deep in one face.

TOOLS USED BY WOMEN

The women of the tribe were the potters, basket-makers, tanners, and garment makers, and the tools that probably were used by them in these various occupations consisted of scrapers, used in dressing hides; others, of clam shells, possibly used as formers and smoothers of pottery; awls, used in making clothing, and possibly in basketry; and netting needles, probably used exclusively in forming the net of snowshoes.

END SCRAPERS

There were twenty-six end scrapers chipped from chert, of which ten were plano-convex, twelve concavo-convex, and one double convex (Plate XIV, figures 3 to 8), and seven appeared to be unfinished. Three were mere chips; fifteen were smaller at one end than at the other and somewhat ovoid in outline (figure 4); two were oblong (figure 8), and one was triangular (figure 3). Seven had the sides incurved as in figures 5 to 7. Two were used on more than one edge. In length they ranged from $\frac{9}{32}$ inch to 2 inches, in width from $\frac{21}{32}$ inch to $1\frac{1}{4}$ inches, and in thickness from $\frac{7}{32}$ inch to $\frac{9}{16}$ inch.

CLAM SHELL FORMERS OR SCRAPERS

Thirty-five half shells of five species of freshwater clams, including eighteen right and seventeen left valves, either had the posterior ends worn to a point (Plate XVI, figure 2) or worn off considerably as in the small one seen in Plate XIV, figure 1, or had the entire margin worn. A few had the ventral margin worn. A left valve (Cat. No. VIII-F-24976) had part of the ventral margin, the anterior end, and even the hinge teeth considerably worn. There is in the Case collection, Toronto, from this site, a rectangular section of the marginal part of a clam shell with both ends slightly smoothed and the long edges considerably worn.

CLAM SHELL SMOOTHERS

Eight left and nine right valves of freshwater clams were used, probably as pottery smoothers, in some cases until a hole appeared through the sides.

BONE AND ANTLER AWLS

There were two hundred and seventy awls, including five made of antler, which were mostly in a good state of preservation, although some had either the tips or bases missing. They were from $1\frac{3}{8}$ to $7\frac{3}{8}$ inches long and from $\frac{3}{16}$ inch to $1\frac{1}{4}$ inches in diameter (*See* Plate XIV, figures 9 to 32). Forty were made of the long bones of birds (figure 19), fish, and mammals, the latter including a splint bone of a deer (figure 9), two splanchnic bones of raccoons (figures 10 and 11), one radius of a fox (figure 12), a considerably modified bear ulna (figure 14), a squirrel tibia (figure 16), and a lynx ulna (figure 22), which only required sharpening at one end to form serviceable tools, one of the joints being usually retained as a handle. Two hundred were certainly, and thirty were probably, derived from deer bones, which were first sawn or split into long slender pieces before they could be fashioned into awls. In thirty-four awls derived from long bones of deer one of the joints was retained, and in one hundred and sixty, the marrow hollow. One hundred and eight were derived from rough splinters by merely sharpening one of the ends, twelve being shaped like the one in figure 13. Only a few were either smoothly finished (figures 20, 30, and 32), or highly polished. One was double pointed. The majority had fine sharp tips. Only a few had the bases smoothed or finished, four had grooves round the butt (figures 27, 30-32), and others bore incised decoration (figures 25, 26, 28, 29). The antler awls consisted mainly of tines (one $8\frac{5}{8}$ inches long) with the tips brought to a point. One was crude with the tip obtusely pointed (Cat. No. VIII-F-24568*k*) and one was smoothly finished (figure 18).

BONE NETTING-NEEDLES

There were three bone netting-needles, one of which (Cat. No. VIII-F-24388), apparently made from the outer wall of a rib and $\frac{1}{16}$ inch thick, was fragmentary. A complete needle, $\frac{3}{32}$ inch thick (Plate XIV, figure 33), also derived from the wall of a rib, was curved from end to end. The eye, $\frac{1}{4}$ inch by $\frac{1}{16}$ inch in diameter, was formed by incising or grooving from both faces until the grooves met in the middle. The longest needle that the writer has seen from an Iroquois site (*See* Plate XIV, figure 34) was $6\frac{7}{8}$ inches long, $\frac{1}{4}$ inch wide, and $\frac{1}{16}$ inch thick. It was curved from end to end and appeared to have been of the same kind of material as the one in figure 33. The hole was circular, biconical, and $\frac{3}{32}$ inch in diameter.

ARTICLES OF PERSONAL ADORNMENT

The articles used in personal adornment consisted of beads, pendants, and wristlets or armlets. There were no beads made of the shell of the small marine snail, *Marginella apicina,* which have been found in most Iroquois sites explored by the author.

PAINT

What may have been material for face paint consisted of a lump of what seemed to be yellow ochre, but may also have been decomposed iron pyrites.

BEADS

Beads were made of shell, bone, and earthenware—one is derived from a tooth.

SHELL BEADS

There were no beads made from pieces of freshwater clam shells, but four perfectly circular ones made of marine shell, $\frac{5}{32}$ inch to $\frac{7}{32}$ inch in diameter and $\frac{1}{16}$ to $\frac{3}{32}$ inch thick, with biconical holes through the centre, and with straight peripheries, were found near the burnt burial in the ossuary (Cat. No. VIII-F-8729). They were unlike the discoidal beads from post-European Iroquois sites in the same area, being smaller and like ivory in appearance, in which respect they were like the discoidal beads found in graves of a Woodland people.[1]

Many beads were made from whole shells of freshwater snails by piercing the lip, two being shells of *Pleurocera acutum* (Plate XV, figure 7), and sixty-six of *Campeloma decisum* (Plate XV, figure 8). In a few the holes seemed too high in the spire to permit the shells to be strung easily, and so they may not have been used as beads. Most of the shells were whitened, a few were pearly, and a few polished.

BONE BEADS

The hollow bone beads, of which there were eighty-eight, including forty-three fragmentary ones, $\frac{15}{32}$ inch to $2\frac{1}{8}$ inches long, and $\frac{3}{16}$ inch to $\frac{7}{8}$ inch in diameter, were made from short sections of bird bones, with the severed ends smoothed in most cases, and the sides of a few polished. One, scorched, $\frac{7}{8}$ inch long, was made from a section of a dog tibia. The largest (Plate XV, figure 13) was made from a section of a wild turkey humerus. The broken beads were mostly split lengthwise. Only a few had the ends broken off.

BEAD MADE OF A TOOTH

A split fragment of what was probably a bead was made from a section of the canine of a bear, the neural cavity of which served for the reception of the cord on which it was strung (Plate XV, figure 6).

EARTHERNWARE BEADS

Six, mostly roughly cylindrical, earthenware objects may have been abortive attempts to produce beads. The specimen in Plate XV, figure 14, with one end broken and its present length $\frac{11}{16}$ inch, had the opposite end, seen in the illustration, flattened, with a $\frac{1}{8}$-inch hole, $\frac{7}{16}$ inch deep, in the middle. The second specimen (Cat. No. VIII-F-24418*p*) looked like a fragment of a poorly modelled pipe stem. The third and fourth specimens (Cat. Nos. VIII-F-24707*b*,*c*) were like the one illustrated, with one end flattened and the other broken, but the fourth had what seemed to be the beginning of a perforation at each end. The fifth specimen (Cat. No. VIII-F-24707*a*) was conoid with one end broken, and the sixth (Cat. No. VIII-F-24254), oval in cross-section, had a hole in one end.

STONE PENDANTS

There were sixteen pendants made of half-round, nearly circular, oval (Plate XV, figures 1, 2), ovate, and reniform (Plate XV, figure 3), flat-faced pebbles, the majority of shale and a few of sandstone and limestone, one of the latter being crystalline. The suspension holes in fourteen specimens had been only partly drilled, but they were completed in four, one of which had the perforation broken out. One unfinished pendant (Plate XV, figure 2), had, in addition to the beginning of the suspension hole, the commencement of a hole in the middle of each face, which, if it was not the intention to bore the hole right through, was probably intended for ornamentation. If this was the case, it was the only ornamented pendant from the site. The suspension hole in the one in Plate XV, figure 3, was biconical. There was the commencement of a second hole on the opposite face, but it was off centre. Aside from the perforations, none of the pebbles was artificially modified. They were from $\frac{13}{16}$ inch to $2\frac{1}{8}$ inches long, $\frac{5}{8}$ inch to $\frac{11}{16}$ inch wide, and $\frac{5}{32}$ inch to $\frac{21}{32}$ inch thick.

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[1] *See* Author, 1928*b*, p. 190.

What may have been pendants also, consisted of two limestone pebbles, one roughly spheroidal and one ovoid, the latter $\frac{7}{8}$ inch by $\frac{13}{16}$ inch by $\frac{7}{32}$ inch in diameter. The hole in the one in Plate XV, figure 4, appeared to have been formed by the decay of a fossil coral and showed no signs of wearing around the edges; that in the second specimen was natural also, but the edges were worn from the chafing of the suspension cord.

PENDANT MADE OF A TOOTH

The polished left canine of a bear with a biconical hole through the root, in Plate XV, figure 5, was probably worn as a pendant.

ARMLETS OR WRISTLETS

There were five fragments of armlets or wristlets, all apparently made from thin pieces of antler. The two pieces in Plate XV, figure 23, about $\frac{1}{16}$ inch thick, were part of an armlet that had been widest in the middle and tapered towards both ends. Both pieces were decorated with two bands of finely incised reticulate designs, each bounded by two finely scribed parallel lines. The holes through the corners at each end were about $\frac{3}{32}$ inch in diameter. The fragment in figure 24 in the same plate, $\frac{1}{16}$ inch thick, retaining one perforation, was polished and decorated with an incised line about $\frac{1}{8}$ inch away from and parallel with the intact edge, and projecting from the inside of the line was a row of zigzags about $\frac{1}{2}$ inch long, and too faint to be seen with the naked eye. The fragment in figure 25, $\frac{5}{64}$ inch thick, with one side or edge intact, was decorated with a double row of small, roughly circular pits. There were also several faintly incised, apparently meaningless lines that seemed too scattered to have been intended for ornamentation. The curved fragment in figure 26, with the hole broken out, was $\frac{5}{64}$ inch thick.

GAMES AND AMUSEMENTS

There were only two kinds of artifacts that could have been used in games and amusements: potsherd disks and probable units for cup-and-pin games. It is possible also that some of the very small earthenware pots were made by children and used by them as toys.

POTSHERD DISKS

Nine potsherd disks, mostly irregular in outline, and with only parts of their peripheries smoothed, may have been used in games. The largest was $2\frac{1}{4}$ inches in diameter (Plate XV, figure 20) and the smallest (Plate XV, figure 19) $1\frac{1}{32}$ inches, and $\frac{3}{8}$ inch to $\frac{13}{16}$ inch thick. There were in addition two perforated fragmentary disks, with the remains of the holes on the broken edges (Plate XV, figure 21, and Cat. No. VIII-F-24897*e*), and a whole disk, $1\frac{15}{16}$ inches by $1\frac{13}{16}$ inches in diameter and $\frac{5}{16}$ inch thick, with the beginning of a hole on the inside or concave side of the sherd (Plate XV, figure 22).

UNITS FOR CUP-AND-PIN GAMES

What were probably units for cup-and-pin games derived from middle nd proximal phalanges of deer were more numerous at Middleport than at ny other site explored by the author. There were one hundred and eighty-even, of which one hundred and twenty-five were whole. Eleven were nade from middle phalanges. Thirteen, all of proximal phalanges, have holes hrough the distal and proximal joints. In fifteen others the epiphyses were nissing, giving the proximal ends a scalloped appearance. One hundred and wenty had holes through the distal facets and had either the proximal joints ut off, or were severed about the middle, most of them being of the last kind Plate XV, figure 17). Seventeen were not completed; fourteen of these had he proximal ends removed but were not perforated at the distal ends, and four ad the distal facets perforated but not the proximal facets. The severed dges of one hundred and seven specimens were left in the rough and on ourteen they were smoothed. One was decorated (Plate XV, figure 18). The oles through the distal ends were from $\frac{5}{32}$ inch to $\frac{3}{8}$ inch in diameter. Six pecimens were scorched, perhaps accidentally.

SMOKING

The pipes used in smoking were made of stone or of earthenware. A holowed proximal phalanx of a moose also may have been a pipe.

STONE PIPES

There were three stone pipes, all broken, one with the stem missing, and wo with the stems and the major part of the bowl gone. The bowl in Plate XVI, figure 1, made of what appears to be serpentine, was almost perfectly ircular in cross-section, with the bowl cavity of a nearly uniform diameter of inch throughout. The sides of the stem extended beyond the bottom of the owl on each side as in other pipes of the same subtype of monitor[1]. The two nore fragmentary specimens, one of which is seen in Plate XVI, figure 2, were of mestone, and retained parts of the bowl cavity. The pipe illustrated retained ufficient of its bowl and stem to give an idea of its shape, enough at least to uggest the conjectural restoration in Figure 4*d*. It was highly polished. The extension of the sides of the bowl suggested that it was some form of nonitor pipe when complete.

EARTHENWARE PIPES

There were three hundred and fifty earthenware pipes, of which eleven vere more or less complete (*See* Plate XVI, figures 6 to 9, 11, 25, and Plate XVII, figures 8, 20), and the rest fragmentary. The stems were missing from ne hundred and eighteen bowls, of which twenty-two bowls were complete *See* Plate XVI, figures 5, 10, 12 to 23, and Plate XVII, figures 1 to 7, 9 to 18, 21 to 27). Sixty-eight out of two hundred fragmentary bowls were broken nto small pieces. There were one hundred and sixty stems of broken pipes.

The pipes were found in all trenches excepting 1 and 2, but most of them ame from trenches 3 and 7.

The paste used in the manufacture of earthenware pipes was either clay lone or clay tempered with fine, medium, or coarse particles of gneiss, quartz, r mica, the coarse particles in one fragment being at least $\frac{3}{16}$ inch in diameter.

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[1] Cf. McGuire, fig. 90.

One hundred and eighty-eight pipes contained fine tempering, twenty-two medium, and one coarse tempering, although the appearances of the fractured surfaces of a few other pieces suggested that they contained coarse tempering also. The particles of fine tempering were so fine that they could be seen only under a microscope. As could be seen from the fractured surfaces, the texture of most earthenware pipes was much closer than in pottery.

The hardness as ascertained by the March method was as follows: fifteen were 2; three hundred and twenty, 2·5; ninety-nine, 3; seventeen, 3·5; six, 4; and one, 4·5.

The pipes were baked until they were red, grey, or black, two hundred and eighty-eight being red, eighty-two grey, and two black. Two of the red pipes were of a terra-cotta colour.

The surfaces of one hundred and thirty-eight bowls were smoothed, eight bowls and thirty-two stems were polished, ten bowls were somewhat glossy (Plate XVI, figures 8 and 13, and Plate XVII, figure 25), and twenty-nine bowls (Plate XVI, figure 11) were rough. Six bowls were crudely modelled with uneven surfaces.

All pipes were stemmed and all but a few bowls were at right angles to the stem (Plate XVI, figures 6, 7, 9, 10, and Plate XVII, figures 8, 20). Other bowls and stems were at an obtuse angle (Plate XVI, figures 8, 13, and Plate XVII, figure 25). The stems were from $\frac{5}{8}$ inch to $3\frac{1}{16}$ inches long, $\frac{1}{4}$ inch to $\frac{15}{16}$ inch in diameter at the tips, and $\frac{1}{4}$ inch to $1\frac{5}{32}$ inches at their junctions with the bowls. The diameters of the stem holes, which were circular and larger at the tip than they were farther in, were $\frac{3}{32}$ to $\frac{9}{32}$ inch.

Eight stems tapered rapidly from their junctions with the bowl to the tip, but most of them tapered more or less gradually. Two were short and stubby (*See* Figure 3*c*).

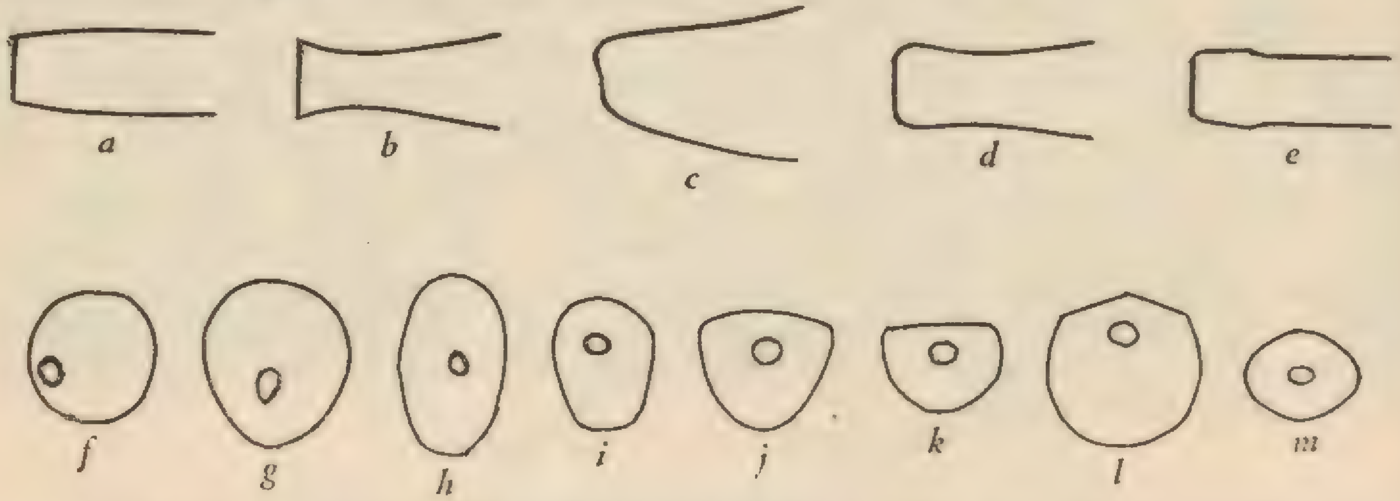

Figure 3. Shapes and cross-sections of certain stems of earthenware pipes.
f—Cat. No. VIII-F-8822*a*.
g—Cat. No. VIII-F-24547*b*.
h—of stem in Plate XVI, fig. 3.
i—of stem shown above in fig. *c* of this figure.
j—of Plate XVII, fig. 25.
k—Cat. No. VIII-F-24626*d*.
l—Cat. No. VIII-F-24685*a*.
m—of Plate XVI, fig. 8.

The tips of the mouthpieces were either straight, as in forty-three examples (Figure 3*a*), rounded, as on twenty-six stems, and flaring, as on twenty-seven others (Figure 3*b*). A few were like Figure 3*d* and one was like *e*. Fourteen broken stems were ground to shape and the fractured surfaces where the stems had been broken off close to the bowl were also ground. The mouthpieces of three stems had become polished from being held in the mouth (Cat. Nos. VIII-F-24626*d* and VIII-F-24683*d*, *m*).

The cross-sections of the stems varied, one hundred and thirty-two being circular or roughly circular (*See* Figure 3*f*); two, half round (*k*); eleven, oval; three, ovoid (*g*); two, oblong (*h*); one, lenticular (Plate XVI, figure 8, and Figure 3*m*); one, triangular; one, curvilinear-triangular (Plate XVII, figure 25, and Figure 3*j*); and one was like that in Figure 3*l*.

One hundred and one bowls were plain (Plate XVI, figures 5 to 9, 11, 13) and one hundred and sixty-five decorated (Plate XVI, figures 6, 10, 12, 14 to 25, and Plate XVII, figures 1 to 19, 21, 27). (*See also* under Art.)

The bowls were of several different types: I, cylindrical; II, ovoid; III, barrel-shaped; IV, conoid; V, vasiform; and VI, urn-shaped. One, seemingly a toy, was of the monitor type and one might be described as a divergent monitor.

There were thirty-eight bowls of the cylindrical type, thirty-one of which had straight, vertical sides (Plate XVI, figures 9, 10, 13); three were flared slightly at the top (Plate XVI, figure 6); one had slightly incurved sides; one had a raised, rounded collar around the top; one was oval in lateral cross-section; and one had an animal form modelled on the front (Plate XVII, figure 26). Three bowls were of the ovoid type (Plate XVII, figure 10, 12, and 24).

Forty-two bowls were barrel-shaped, but they were not quite the same as those found in the Lawson village site. The sides of the upper part of nine bowls were more or less straight vertically (Plate XVII, figures 3, 23); twenty-three bowls had the top incurved (Plate XVII, figures 5 to 9, 11); six were oval in lateral cross-section (Plate XVI, figures 2, 5 to 9, also cross-section in Figure 4*g*); three were like Plate XVI, figure 24 (*See also* Figure 4*a*); and one had a narrow rounded collar around the top (Plate XVII, figure 1).

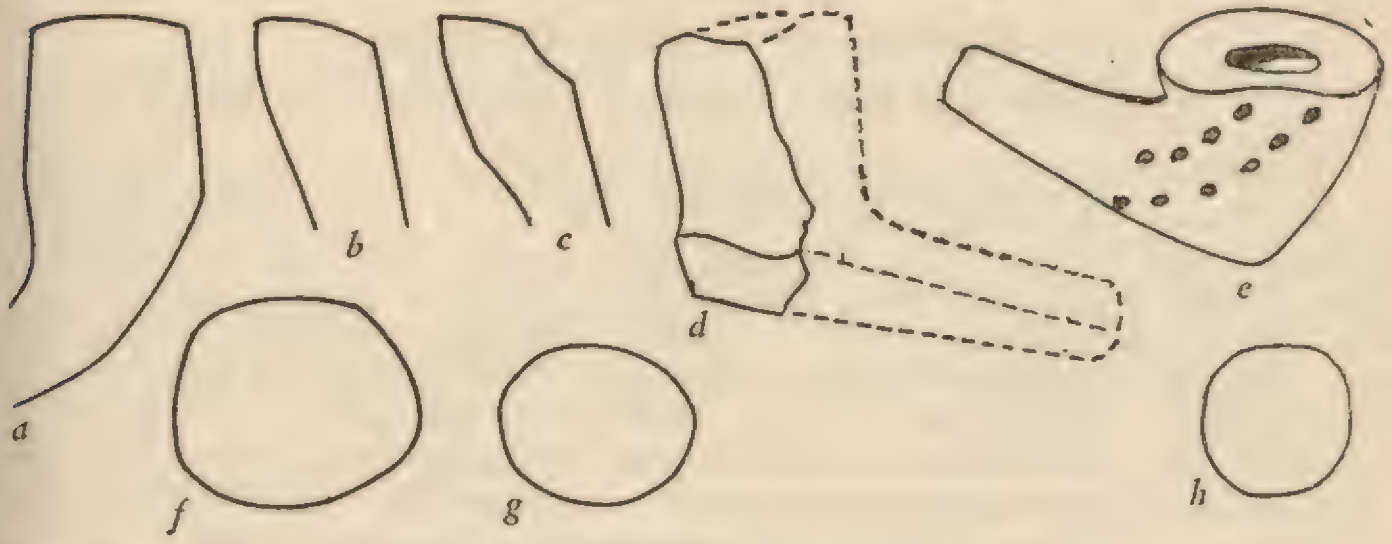

Figure 4. Shapes of bowls and cross-sections.
a—of bowl of same type as Plate XVI, fig. 24.
b—Cross-section of wall of bowl of cone-shaped type (Cat. No. VIII-F-24427*b*).
c—Cross-section of wall of bowl of cone-shaped type (Cat. No. VIII-F-24422*a*).
d—Conjectural restoration of fragment of bowl of stone pipe in Plate XVI, fig. 2.
e—Conjectural restoration of earthenware pipe in Plate XVI, fig. 19.
f—Outline of top of bowl in Plate XVII, fig. 25.
g—Outline of top of bowl in Plate XVII, fig. 5.
h—Outline of top of bowl in Plate XVII, fig. 26.

Ninety-six bowls were conoid, of which thirty-seven had straight sides (Plate XVI, figures 5, 8, 16, 17, 19, 21, 22, 24, and Plate XVII, figure 22); twenty-one had convex sides (Plate XVI, figure 20), one of which had a blank, circular, flattened face on the back just above its junction with the stem; forty-one had slightly flaring tops (Plate XVI, figures 14, 18, 23), one of which had thin sides and gracefully flaring lips as in some trumpet pipes (Cat. No. VIII-F-24694*f*); and one trapezoidal in cross-section (*See* Figure 5*f*), with flattened sides (Plate

XVII, figure 25). The walls of some of the cone-shaped bowls were like Figure 4*b*, *c*, in cross-section. Five of the bowls were vasiform (Plate XVII, figures 20, 27), and the one in figure 13, in the same plate, may have been of this type also.

There was only one urn-shaped bowl (Plate XVI, figure 15). The modified monitor type of pipe in Plate XVI, figure 6, was probably of Woodland origin. The bowl was at an angle of about 45 degrees to the stem and had a decided heel at the back. The sides of the stem extended beyond the sides of the bowl on each side as in other pipes of this sub-type. The bowl cavity was somewhat conical and about $\frac{7}{16}$ inch in diameter. Part of the lip edge at the back had been broken and ground smooth. The small broken monitor in Plate XVI, figure 5, of which there is a conjectural restoration in the accompanying drawing, was probably a toy made by a child, but it possesses all the features of some sub-types of monitors, even to the basal extension in front of the bowl.

One bowl fragment with the stem missing had a $\frac{7}{32}$ inch hole drilled through the side for the reception of a separate stem.

A few of the bowls had sharp heels (Plate XVI, figure 19; Figure 4*e*; and Plate XVII, figure 5). In one case the bottom of the bowl projected downwards and a vertical ridge along both sides of the bowl extended down to it (Cat. No. VIII-F-24687*s*).

The tops of the bowls were from about $\frac{3}{8}$ inch (Plate XVI, figure 5) to $2\frac{3}{8}$ inches in diameter.

The thickness of the walls of the bowls varied from $\frac{1}{4}$ inch to $\frac{3}{4}$ inch.

Many of the bowls and stems were almost perfectly circular in cross-section, but there was nothing to suggest that some sort of templet of wood or other material had been used to bring them to such perfection.

ARTIFACTS OF UNKNOWN USE

A few stone, bone, and antler objects of unknown use are dealt with under this head.

Four stone objects with a sharp edge along one of the long sides were of uncertain use. The stone object in Plate XIII, figure 4, was $\frac{9}{16}$ inch thick, and the broken one in figure 5, in the same plate, was $\frac{7}{16}$ inch. One of horneblende schist, $\frac{1}{2}$ inch thick, with both ends broken, and now roughly square and $1\frac{3}{8}$ inches by $1\frac{3}{8}$ inches in diameter, decreased in thickness to within $\frac{1}{4}$ inch of the edge where it was ground abruptly from both faces to form the edge (Cat. No. VIII-F-24676). One of the same material as the last, broken at each end and now somewhat rhomboidal in shape, was $2\frac{1}{4}$ inches long, $1\frac{7}{16}$ inches wide, $\frac{1}{4}$ inch thick, and wedge-shaped in cross-section (Cat. No. VIII-F-24821). They were of the same type and probably had the same function, whatever that may have been, as several found in the Uren[1] and Roebuck village sites[2].

A fragment of a limestone object (VIII-F-24796), about 2 inches long and $\frac{5}{8}$ inch in diameter, with a curvilinear-triangular cross-section at one end and ovoid at the other, and with the sides bearing marks of scraping, was of unknown use, unless it was part of the stem of an unfinished pipe.

The short section of the shell of a fossil *Orthoceras*, roughly half-round in cross-section and $\frac{3}{4}$ inch thick, in Plate XVIII, figure 7, has a V-shaped notch on one side and both ends are partly rounded, probably rubbed.

A roughly trapezoidal thin piece of sheet copper, $\frac{3}{4}$ inch by $\frac{3}{4}$ inch in diameter (Cat. No. VIII-F-24363), which presented a laminated appearance and uneven surfaces as if from hammering, and with two of its edges smoothed, was either in process of manufacture into a tubular bead or was actually used as some sort of tool.

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[1] *See* author, 1928*a*, Pl. XIX, fig. 5, and p. 42.

[2] *See* author, 1936, Pl. XIV, fig. 19, and p. 85.

Among the nondescript bone objects was a fragment of a polished, parallel-
ided piece of bone (Cat. No. VIII-F-24380); a long, wide splinter of a deer
ibia, with one end rubbed off round (Cat. No. VIII-F-24983a), but with the
ong edges left in the rough; and six crude, obtusely pointed tools, perhaps unfin-
shed, one of which was derived from a piece of the back wall of a deer tibia
Cat. No. VIII-F-24983*b*), and the others from splinters of metapodials (Cat.
Vos. VIII-F-24833*k*, *o*, *t*, and VIII-F-24834*g*, *u*).

The proximal phalanx of a moose, neatly hollowed out until the bone was
mere shell, with a hole through the distal articular facet (Plate XVIII,
gure 9), possibly was a pipe, although the sides were not scorched by burning
obacco as in a bone pipe from the Lawson village site.[1] It was too large to be a
nit for a cup-and-pin game, like those made from the same kinds of bones of the
eer, described under "Games and Amusements".

A right scapula of a deer (Cat. No. VIII-F-24980), with a large triangular
iece removed from the thin plates and the broken edges scorched, was worn or
olished on the outer or axillary border, possibly from use as a hide scraper,
sed draw-shave fashion.

There were two fragments of what seemed to have been tubes, one of which
Cat. No. VIII-F-24408) was made from a large bone about the same diameter
s the shaft of a deer femur, and was scorched, perhaps purposely, and polished.
'he second fragment was scorched to a rich brown and was considerably polished
Cat. No. VIII-F-8812).

There were six flute-like bone objects from $1\frac{15}{16}$ to $3\frac{5}{8}$ inches long, with
naximum diameters from $\frac{7}{32}$ to $\frac{9}{32}$ inch, and with from two to four conical
oles or vents $\frac{3}{32}$ inch to $\frac{3}{16}$ inch in diameter and from $\frac{3}{8}$ inch to $\frac{3}{4}$ inch apart
Plate XV, figures 27 to 32). Figure 30 shows the longest object. One end of
ne specimen in figure 27 was discoloured, possibly from being held in the mouth,
lthough the discoloration extends beyond the first hole at that end. One of
ne ends of the specimen in figure 29 was blackened by scorching, either acci-
entally or intentionally. The one in figure 28 was longer originally, as can be
een from the remains of a hole at the broken end. Three specimens were made
om sections of bird radii, one from a bird ulna, and two, both unfinished, from
biæ of small mammals, one being that of a black or grey squirrel, and the
ther unidentified. One specimen (figure 31) had both joints broken off, with
vo conical holes on the back of the shaft. The second (figure 32) retains both
ints, the proximal joint being broken, and has two gouged-out oblong holes on
ne front or dorsal side of the bone. The cut ends of three specimens derived
om bird bones had one or two ends smoothed. It is uncertain whether these
bjects were actually used as flutes or whistles, which use is suggested by the
ent-like holes. Blowing into them, at the same time closing some of the holes
ith the finger tips, failed to produce even a low whistle. Boyle thinks that
When the holes are numerous, a suggested use of the bone is that of a receptacle
r feathers, porcupine quills, and the like, for personal decoration, perhaps more
specially about the head. Employed in some such way it would be easier to
rrange the ornamenting material in one of these and then fasten it to the hair
an to insert single feathers in the hair without any support, and this would
pply with greater force when the person to be decorated had to do the decorating
r himself. This is not by any means offered as a theory as to what was the
se of such bone objects, but merely to show that there are other possible uses
esides that of a whistle."[2]

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[1] *See* Wintemberg, 1939, Pl. XV, fig. 17.
[2] Boyle, 1904, p. 33.

In Ontario these flute-like objects seem to be peculiar to Iroquois sites of the Neutral Focus[1]; none has been reported from presumed Huron, Tionontati, and Mohawk-Onondaga sites in Ontario, and none was found by Parker in an Erie site near Ripley, New York, although Greenman found some in the Reeves site in Ohio.[2] Outside of the Iroquois area they have been found in sites of the Fort Ancient Aspect of the Upper Mississippi Phase, in Ohio[3] and Kentucky[4], at sites of the same Aspect, probably, in Indiana[5], at a site of the Archaic Pattern at Lamoka[6], and a site of the Owasco Aspect, Northeastern Phase of the Woodland Pattern, in New York.[7] They have even been found as far away as British Columbia[8] and New Mexico.[9]

There were also a few antler objects whose use is conjectural. The fragmentary pointed object in Plate XVIII, figure 5, oval in cross-section, $\frac{7}{32}$ inch thick, and neatly finished, may have been used in chipping, although there are no scars on the pointed end to suggest such a use. The scorched object in Plate XVIII, figure 2, with the smaller end rubbed flat from two sides to form a chisel-like edge, and with a deep hollow on one side of the thickest part, may have been hafted in the way Willoughby suggests that antler blades similarly hollowed from the Madisonville site were hafted.[10] In our specimen, however, the sharpened end would have curved in the wrong direction to be effective. The use of the antler object pointed at one end, illustrated in Plate XVIII, figure 4, is also uncertain. Although there are no signs of wearing or polish on the pointed end, it was used possibly as a hoe to break up the soil. It will be recalled that similar specimens were found in the Roebuck site, but they were all larger than the Middleport specimen, which was only $5\frac{13}{16}$ inches long, whereas the largest specimen from Roebuck was $7\frac{11}{16}$ inches. A smaller pointed object (Plate XVIII, figure 3), probably with an analogous function, was made from a large antler tine. The fragmentary object in Plate XVIII, figure 12, derived from the beam of an antler cut in half lengthwise, has this face hollowed like a gouge, exposing the cancellous structure. The base shows cutting.

The fragmentary object, probably a tube, in Plate XV, figure 33, of which about two-thirds was missing, was made of antler by hollowing the cancellated interior until the walls were about $\frac{1}{8}$ inch thick. The sides were polished and the unbroken end was smoothed. When whole it was probably about $\frac{7}{8}$ inch in diameter and must have been more than 3 inches long.

Several antler tines, some of which had rounded or sharpened tips (Cat. Nos. VIII-F-8810*a*, VIII-F-8852, and VIII-F-24431*d*, *k*), may have been used to punch holes in skins or bark, or to produce some of the punctate decoration on pottery.

One antler tine (Plate XVIII, figure 1) had a V-shaped groove about $\frac{3}{4}$ inch long and $\frac{3}{32}$ inch deep and wide, along one side of the tip, as if for a seat for the reception of some sort of blade or point.

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[1] Two from a site on lot II, first range S. of Hamilton rd., Brantford tp., Brant co. *See* Boyle, 1904, fig. 35; two from sites in Malahide tp., Brant co. (Cat. Nos. VIII-F-6655 and VIII-F-6669, National Museum of Canada), and one from either Halton or Wentworth county (Cat. No. II.D. 2124, Royal Ont. Mus. of Archæology, Toronto).

[2] Greenman, 1935, p. 18 and Fig. 20.

[3] Willoughby, 1920, Pl. 15, fig. *d*, showing one from the Willoughby Madisonville site.

[4] Smith, 1910, Pl. XLII, fig. 2, and Pl. LI, figs. 13, 14.

[5] Lilly, 1937, lower left corner of plate opposite p. 216.

[6] Ritchie, 1932, p. 105, and Pl. IX, figs. 26, 27.

[7] Ritchie, 1936, p. 47, and Pl. IX, fig. 5.

[8] Boyle, 1904, fig. 34.

[9] Hodge, 1920, Pl. XXXIV, figs. *e* to *i* and p

[10] *See* Willoughby, 1920, Pl. 13, figs. *a* to *e*.

MANUFACTURING PROCESSES

The various processes employed in the manufacture of artifacts of stone, bone, antler, and teeth at the Middleport site were: breaking, scorching and breaking, scoring (or grooving) and breaking, chipping, scraping, rubbing or grinding, drilling, and perforating.

BREAKING

The most simple process was breaking, which was used to reduce a piece of material to a size approximating that of the implement the workman intended to make.

SCORCHING AND BREAKING

The appearance of the severed ends of a piece of bone and twelve pieces of antler suggests that they had been rendered brittle by scorching with a live coal and then were easily broken.

SCORING OR GROOVING AND BREAKING

To control the breaking, pieces of bone and antler were either scored crosswise to break them in two, or grooved lengthwise to produce long slender pieces suitable for transformation into tools such as awls and chipping punches. In some cases two or more deep longitudinal grooves were made to divide antler beams into pieces like the one in Plate XVIII, figure 15. Some large bones, the deer metapodials in Plate XVIII, figures 10 and 11, for example, were grooved on the front and back to facilitate breaking in half lengthwise. The grooves on both sides of the raccoon jaw in Plate XVIII, figure 8, suggest that the worker intended to cut it into two pieces. Pieces of bone and antler that had been separated by scoring and breaking are seen in Plate XIV, figure 17, Plate XV, figures 9 to 13, 17, 27 to 30, and 33, and Plate XVIII, figures 13 to 17.

CHIPPING

The large quantity of chippings and masses of chert, and the many chert projectile, knife and drill points, and side and end scrapers, testify to the importance of this industry at Middleport. Some of the best examples of this process are seen in Plate I, figures 1 to 3, 11, 23, 31, and 32. Antler punches like those in Plate XIII, figures 16 to 18, were probably used in chipping. There was also a piece of antler with a scarred tip, which may have been used as a pressure flaker.

SCRAPING

The striæ on the sides of three antler stubs from which the tines had been cut for manufacture into arrowpoints (Plate XVIII, figures 13 and 14) showed that before removal the tines had been reduced in thickness by scraping, probably with concave-edged scrapers like those in Plate XIII, figures 14 and 15. The fragment of a limestone object, described on page 26, also appears to have been scraped into shape.

RUBBING OR GRINDING

This process was used in the manufacture of many different artifacts—on antler arrowpoints (Plate I, figures 36, 37), harpoon head (Plate I, figure 38), on stone and antler chisels and adzes (Plate XIII, figures 1 to 5, 19), on the tips and sides of bone and antler awls (Plate XIV, figures 9 to 32), on bone netting-needles (Plate XIV, figures 33, 34), on the ends of tubular bone beads (Plate XV, figures 9 to 13), and on a bead made from a bear canine (Plate XV, figure 6), on the ends of the deer phalanx game units (Plate XV, figure 17), on the ends of flute-like bone objects (Plate XV, figures 27 to 30), on five potsherd disks (Plate XV, figures 19, 22), on the ends of bone and antler tubes (Plate XV, figure 33), on the broken tips of the stems of earthenware pipes (Plate XVI, figure 25), and on the antler objects in Plate XVIII, figures 2 to 5. The whetstones described under "Tools used by Men" were probably used in this process. The grooved whetstone in Plate XIII, figure 21, may have been used specially for rubbing bone awls and other objects to a point.

DRILLING

Holes formed by drilling, probably with drills like those in Plate XIII, figures 6 to 11, can be seen on stone, bone, and antler objects. Conical holes were drilled into pottery fragments so they could be bound together after the pots became cracked; in a fragment of an armlet (Plate XV, figure 26); in one hundred and thirty-two game units, made from deer phalanges (Plate XV, figures 17, 19); in a pipe bowl for the reception of a separate stem after the stem was broken off; and into the distal end of a moose phalanx (Plate XVIII, figure 9). There were biconical holes in two fragmentary antler harpoon points (Plate I, figures 38, 39), in a bone netting-needle (Plate XIV, figure 34), in three pebble pendants (Plate XV, figures 1, 3), in a bear canine (Plate XV, figure 5), and in a broken potsherd disk (Plate XV, figure 21). Holes were drilled straight through the distal ends of twenty-two game units made from deer phalanges. The bowl cavities of two stone pipes (Plate XVI, figures 1, 2), and the stem hole of that in figure 1, may have been bored with solid wooden drills aided by sand and water. However, it is possible that the object chipped from chert with the broad end worn from use (Plate XIII, figure 12) was used in drilling the bowl cavities of pipes. In one hundred and twenty phalanges, which had been transformed into game units, the drilling was facilitated by scorching the distal facets, probably with a live coal.

PERFORATING

Some of the holes in some of the artifacts were produced by gouging, grooving, or hollowing. Thus, the holes through the ends of the antler armlets in Plate XV, figures 23, 24, and the holes through the distal ends of two game units derived from deer phalanges (Plate XV, figure 16) were formed by grinding a V-shaped notch in the distal end of the bone, as was also the lenticular eye in the bone netting-needle in Plate XIV, figure 33. In twelve game units, one of which is seen in Plate XV, figure 15, the distal articulate facet of the bone was ground until a hole appeared.

DECORATIVE ART

Decorative art found its chief expression in the ornamentation of pottery and pipes and a few objects of bone. There were only two examples of modelling in the round.

The decorative elements on pottery from the Middleport site consisted of notches; circular, half-round, oval, almond-shaped, oblong, lenticular, crescentic, clavate, triangular, square, rectangular, and crude depressions; stamped circles; and vertical, diagonal, and horizontal lines.

The top edge of two rims was notched, giving them a scalloped appearance (Plate III, figure 1). The outer angles of the lips of forty rims were notched, there being other decorative elements below on thirty-five rims (Plate V, figure 18, and Plate VII, figure 9). Twice as many rims were notched on the inside angle of the lips and there were two rims with notches on both outer and inner angles. There were notches on the longer angles of the bone object, probably part of an awl, in Plate XIV, figure 29.

Circular elements formed the sole decoration on the outside of one rim, on the inside of a rim, on the sides of a small toy pot (Cat. No. VIII-F-24747*m*), in an encircling row on a shoulder, and on five bowls of earthenware pipes (Plate XVI, figures 15, 17, 24, and Plate XVII, figure 27). They were combined with other elements, being in a triangular group of three on four rims; on the pipe stem in Plate XVI, figure 3; and on eight bowls of earthenware pipes, usually below bands of encircling lines (Plate XVI, figure 23, and Plate XVII, figure 13). There were semicircular depressions on eleven rims, superimposed in four cases on other decoration.

There were oval elements on the flat lip edge of three rims. They formed the sole decoration of nine rims, being in a single row on one (Plate III, figure 3), in an encircling row at top and bottom of three (Plate III, figure 12), and arranged in groups of two in double rows on two others (Plate V, figure 17); in a single row, $\frac{1}{4}$ inch to $\frac{3}{4}$ inch below the lip edge and $\frac{13}{16}$ inch to 2 inches apart, on the inside of twenty rims; on a neck fragment; in single encircling rows on nine shoulders; and on bowls of two earthenware pipes (Plate XVI, figure 12, and Plate XVII, figure 1). They were combined with other elements, being in a triangular group of three in one case (Plate VII, figure 10), on sixty-two rims; superimposed on other decoration or in a row along the bottom; combined with other elements on the rims (Plate V, figure 21) and necks of twelve pots; formed part of the decoration of two necks; and on bowls of seven pipes (Plate XVI, figure 23, and Plate XVII, figures 1, 18). In one case they were in rows in groups of two, each arranged in the form of a V, with horizontal lines between them (Cat. No. VIII-F-24774*v*).

Almond-shaped elements, almost ovoid in a few cases, formed the sole decoration on the lip edge of one pot rim (Cat. No. VIII-F-24858*a*); on the outside of six rims (Plate III, figure 4); in single rows, $\frac{1}{4}$ inch to $\frac{5}{8}$ inch below the lip edge and $\frac{1}{4}$ inch to $1\frac{5}{8}$ inches apart, on the inside of forty-two rims; on twelve necks; and sixteen shoulders. They were combined with other elements on two hundred and fifty rim fragments (Plate III, figure 11; Plate IV, figures 1, 4 to 9, 11, 12; Plate V, figures 10, 16; and Plate VII, figures 8, 9); in one case in a triangular group of three (Plate VII, figure 11), and in one superimposed on the rows of short vertical or diagonal linear elements described below; on twenty-four necks, part of the decoration being on the rim above (Plate III, figure 19; Plate V, figures 5, 19; Plate VI, figures 4, 9; Plate VII, figure 3; and Plate VIII, figures 2, 4); on two shoulders; and on two bowls of earthenware pipes (Plate XVII, figure 25).

There was a row of oblong depressions on the lip edge of one rim. Such depressions formed the sole decoration on the outside of six rims (Plate III, figures 7, 10, 15), on the inside of two rims, on eight neck fragments, and one shoulder fragment, and they were combined with other elements on about ninety rims (Plate III, figures 6, 11, 16; Plate IV, figures 16 (middle), 17, 19 (top); Plate VI, figure 3 (superimposed), 13; and Plate VII, figure 2 (along bottom)), one neck, three shoulder fragments, and a bowl of an earthenware pipe.

There were lenticular elements on the flat lip edges of fifteen rims, in one case placed diagonally, and they formed the sole decoration on the outside of forty rims (Plate III, figures 9 and 18), in three cases forming pinnate designs.

These elements were on the inside of about seventy rims, mostly just below the lip edge and from ⅛ inch to 1⅝ inches apart, in a few cases with their longer diameters placed horizontally in a row; on forty-four neck fragments (Plate III, figures 6, 13, 19), being in a single row on forty, in a double row on two, in a vertical row on two, and forming pinnate or herring-bone designs on three; and on sixty shoulders. They were combined with other elements on three hundred and seventy-three rims (Plate III, figure 11; Plate IV, figures 1, 3, 7, 8, 10 to 12, 14, 15, 17, 19; Plate V, figures 6, 7, 13, 15; Plate VI, figure 3 (along bottom); Plate VII, figures 3, 12 to 15; and Plate VIII, figure 7), in a few cases placed horizontally and in others superimposed on other decorative elements; on sixteen necks; five shoulders; and on five bowls of earthenware pipes, in one case (Plate XVI, figure 23) being in four groups of six and seven each, below somewhat wavy, encircling lines. In eight cases they were in groups of two in rows, each group being like a V, with horizontal lines and other elements (Plate V, figure 19, middle row). In nine others they formed crosses (Plate V, figure 19, top row).

Curved or somewhat crescentic elements formed the sole decoration on the lip edges of two, on the outside of five, and on the inside of two rims, and on one neck fragment. They were combined with other elements on one rim.

Clavate or club-shaped elements formed the sole decoration on four rims; on twelve necks on ten of which they were in single rows, on one in a double row, and on another in a triple row; and on one shoulder, on which they were in a series of diagonal rows. They were combined with other elements on thirty-two rims (Plate III, figure 10; Plate IV, figures 4 and 11 (middle), 13; and Plate VIII, figures 1 and 3). On two of these they were superimposed on other decoration, on one of which they were superimposed on the ridges between deep horizontal grooves, apparently at regular intervals around the rim.

Triangular elements, some of which were somewhat curvilinear, occurred on the lip edges of two rims, on the outside of one rim (Plate III, figure 8), on the inside of one rim, and on two shoulder fragments. They were combined with other elements on three rims (Plate III, figure 14, and Plate V, figure 22). There was a row of crude squarish depressions on one shoulder fragment. Rectangular depressions were combined with other elements on three rims. Crude depressions occurred on the lip edge of one rim, formed the sole decoration on five rims, and were combined with other elements on five rims. Stamped circles were used on only one rim (Plate IX, figure 1) and a neck fragment.

The linear decoration on pottery and earthenware pipes consists of vertical, diagonal, and horizontal lines. Only a few lines were curved, perhaps not intentionally.

Short vertical linear elements (Figure 5*a*) formed the sole decoration on the outside of twenty-nine rims, in one case in double rows with one row at the top and one at the bottom of the collar; on the inside of eight rims, just below the lip edges in all but one, in which the lines were longer and ⅝ inch below the edge; and in the throat of one pot (Cat. No. VIII-F-24639*a*), 3/16 inch to ¼ inch apart, about 1¼ inches below the lip edges. They were combined with other elements on ninety-six rims (Plate III, figure 17; Plate IV, figure 12; and Figure 5*h*, *k*, *l*, *v*, *x*, *cc*, *qq*), in twelve cases with either oblong, half-round, or horizontal linear elements superimposed upon them as shown in Figure 5*d*.

Short, diagonal linear elements slanting to the left (Figure 5*b*) formed the sole decoration on the outside of forty-one rims, being in two rows on two rims (Figure 5*f*), on the inside of twenty-three rims, on three necks (the lines long in one case), and on one shoulder, and they were combined with other elements on two hundred and eighty-eight rims (Plate IV, figures 1, 6, 8, 11, 14;

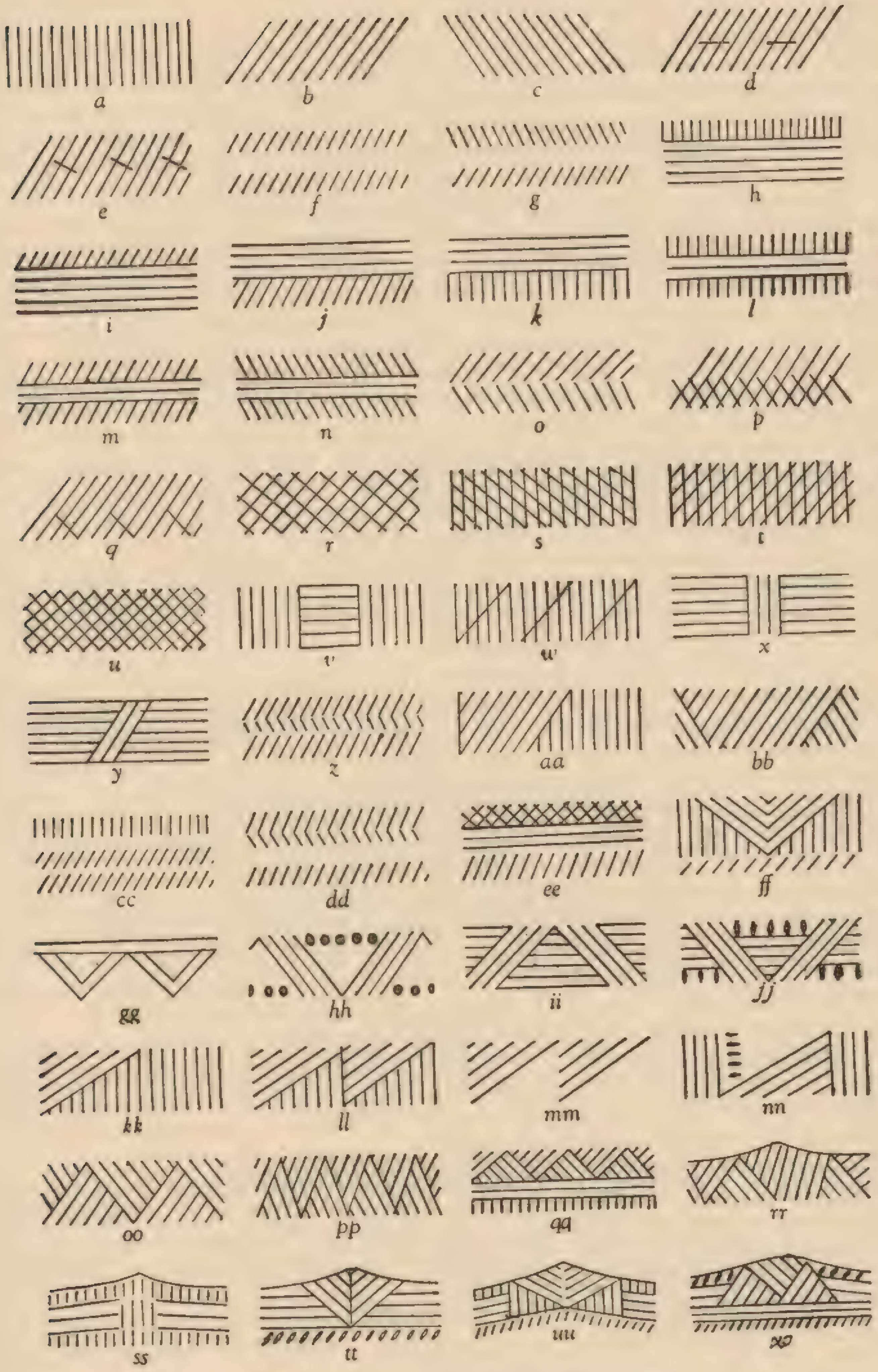

Figure 5. Decorative designs on pottery.

Plate VII, figure 6; and Figure 5*d, e, i, j, m, p, q, t, u, w, y, cc, dd, ee*). One neck fragment (Cat. No. VIII-F-24797*e*) bore a row of crudely drawn diagonal lines, with a row of short vertical lines on the shoulder.

Short diagonal linear elements slanting to the right (Figure 5) were less commonly used than those slanting to the left, as they formed the sole decoration on only twenty-one rims, on the inside of three rims, on two necks (being long in one case), and on one shoulder. They occurred in combination with other elements on twenty-one rims, the elements being superimposed in one case (Plate IV, figure 3; Plate VI, figure 3; and Figure 5*g, n, o, p, q, z, dd*).

Horizontal lines formed the sole decoration on the outside of one hundred and sixty-two rims, thirteen necks, six shoulders, and thirty-two bowls of earthenware pipes. Single lines were used to decorate the flat lip edges of one hundred and fourteen rims. The lines were in bands of three to twelve on many rims and from two to twenty-two on thirty-two earthenware pipe bowls (Plate XVI, figures 1, 6). In fifty cases the lines were in two or more groups, with a narrow vertical blank space after each group of lines, usually below the peaked parts of the rims (Plate VII, figure 3), and with the beginning and ends of the lines more deeply impressed than the middle parts in some cases. Bands of two to nineteen lines were combined with other elements on many pipe bowls (Plate XVI, figures 14, 20, 22, 23, 25, and Plate XVII, figures 11, 12, 23), some of the lines ending in oval depressions. In one case there was a single encircling line between two rows of chevrons (Plate XVII, figure 24), and in another there were two lines above and below complex designs (Plate XVI, figure 18). On the bowl in Plate XVII, figure 10, part of the four lower lines projected downwards abruptly, apparently to form a V-shaped figure like those on pot rims described on page 37.

The decoration on over one hundred rims consisted of elements of one kind. In a few cases it was composed of single rows of simple elements (*See* Plate III (on lip edge), figures 3, 5, and Plate V, figure 2). There were double rows of oval elements on four rims, one row being along the top and the other along the bottom (Plate III, figure 12), and there was other decoration of more than one element of the same kind (*See* Plate III, figures 4, 8, 9, 14, 16; Figure 5*f*; the stone pipe bowl in Plate XVI, figure 1; Plate XVI, figures 10, 12, 16, 17, 19; and Plate XVII, figures 1, 7, all earthenware pipes).

Much of the decoration was composed of two different elements (*See* Plate III, figures 7, 11, 13, 15, 17 to 19; Plate IV, figures 1 to 3, 6, 9, 17, 19; Plate V, figures 1, 6, 7, 11, 12, 18, 20; Plate VI, figures 2, 5, 10; Plate VIII, figure 2; and Figure 5*d, e, g, dd, kk, ll, oo, pp*), and on the bowls of earthenware pipes (Plates XVI, figures 22, 23, 25, and Plate XVII, figures 10, 14 to 16, 21, 23, 25, 27).

Decoration composed of three different elements occurred on a number of rims (*See* Plate III, figures 6, 10; Plate IV, figures 4, 7, 8, 10, 12 to 17; Plate V, figures 3, 4, 8 to 10, 13, 15, 22; Plate VI, figures 4, 6, 7, 11, 12; Plate VII, figures 4 to 6; and Figure 5*gg* to *ii, nn, ss*), and on earthenware pipe bowls (Plate XVI, figures 3, 4, 7, 9, 11 to 13, 18 to 22, 24, 25).

Decoration composed of four different elements, which in some cases was more or less complex, occurred on several rims and earthenware pipes (*See* Plate IV, figures 5, 11; Plate V, figures 5, 17, 19, 21; Plate VI, figures 1, 3, 9, 13; Plate VII, figures 2, 3, 7, 8, 14; Plate VIII, figures 1, 3, 4; Figure 5*ee, qq, tt;* Plate XVI, figure 4; and Plate XVII, figures 4, 11, 12).

There were combinations of five different elements on other rims (*See* Plate V, figure 16; Plate VI, figures 2, 14; Plate VII, figures 9, 12, 13, 15; and Figure 5*uu, vv*).

Six different elements were combined to form the decoration of a few other rims (*See* Plate VII, figure 1, and Plate VIII, figure 7).

A few of the variety of patterns on pottery call for special comment.

Pinnate designs, the most simple of these combinations, occurred on three rim fragments (Plate VIII, figure 1, at bottom) and were combined with other elements on thirty-three rims[1]. On thirteen of these (Figure 5*hh*) they were combined with a row of short linear or other elements slanting to the left, and with two rows on sixteen others, the lower row being on the neck of five of the latter. On the sixth, the row of extra elements and the pinnate designs were so close together that they were almost conjoined to form a zigzag. In six cases it was impossible to determine if the designs were pinnate as the fragments were small. There was a pinnate design on the side of a pipe stem (Cat. No. VIII-F-24588*a*).

The decoration around the top of the pipe bowl in Plate XVII, figure 25, consisted of a zigzag or festoon of small, almond-shaped depressions ("unrolled" in Figure 6*a*).

On two pot rims and on two bowls of earthenware pipes the designs appeared to consist of vertical and horizontal lines in alternate plats (Figure 5*v*). The design on the bowl in Plate XVII, figure 3, was composed of square and rectangular plats filled with vertical, slightly diagonal, and horizontal lines in alternate plats. In the design on the bowl in Plate XVII, figure 4, the plats were square, rectangular, rhomboidal, and trapezoidal, with the upper row of plats filled with vertical and horizontal lines in alternate plats, and the lower row with diagonal and horizontal lines. There were alternating groups of diagonal and horizontal lines on other bowls (Plate XVII, figure 5). In a few cases groups of four vertical or three diagonal lines, like those in Plate V, figure 1, and Figure 5*x*, *y*, seem to have occurred either below the peaked parts of the rims or at intervals around the rims.

Reticulate patterns were composed of either diagonal linear elements (Figure 5*s*, *t*), the diagonal lines slanting to the left on four rims and to the right on six rims (the latter in one case being combined with other elements below, and n two cases with horizontal lines below), or both sets of lines were diagonal, slanting in different directions and forming chequers in four (Figure 5*u*). In eleven cases the diagonal lines of one set were farther apart than those in the other set, which resulted in quadrangular chequers (Figure 5*r*). Two differ from he one in Figure 5*f* in the direction of the slant being reversed. They formed he sole decoration of thirteen rims. In three cases they had lenticular depressions superimposed on the lines; in two others there was a row of similar depressions along the bottom of the design; in one there was a row of oblong depressions; and in one, vertical lenticular depressions along the bottom (Figure 5*ee*). In three cases there were horizontal lines below, and in ten, horizontal ines and either almond or lenticular depressions below. In one case there was a pinnate design below, and on another horizontal lines and a pinnate design. n two others there were horizontal lines below and on another a reticulate design.

Other decorative combinations may represent steps in the evolution of the eticulate pattern (Figure 5*w*). There was also a suggestion of this in patterns ike those in Figure 5*p* and *q*. Six with the design like the one in *q*, of which here were sixteen examples, had almond-shaped, oval, or lenticular elements elow. In one pattern the slant of the short and long lines was reversed. On ine rims was a row of blank triangular spaces formed by two sets of from two o four diagonal lines, the lines of each set slanting in opposite directions, as in hat seen in Figure 5*gg*. On twenty-four specimens of pottery there was a row of val or other elements across the widest part of the blank plat as in Figure 5*hh*, Plate V, figure 3, and Plate VIII, figure 4 (in neck), although in the one in Plate

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[1] **A pinnate design is also seen on Woodland pottery from the site (Plate XI, figure 18, along top).**

V, figure 3, the triangular plats were formed by single lines. One rim had a row of large oval depressions at wide intervals along the bottom. A further development (Figure 5*ii*), in which the triangular spaces were filled with horizontal lines, occurred on four rims and on two pipe bowls (Plate XVII, figures 5 and 12). In a still further development in complexity, seen in Figure 5*jj*, which occurred on three rims, there was, in addition to the lines, a row of oval or other depressions across the widest part of the triangle.

The complex decorations composed of two opposing rows of triangular plats, filled with lines slanting in opposite directions in alternate plats, were of five different kinds; the first with narrow plats (Figure 5*pp*), seen on seven rim and one neck fragment and on a few bowls of earthenware pipes, with either an encircling row of pits or lines below (Plate XVII, figures 11, 21, 24 (at top)); the second with plats like those in Figure 5*oo* and *qq* (on top), on four rims and one neck fragment (*See* Plate V, figures 7, 10, and Plate VI, figure 7), and on bowls of earthenware pipes (*See* Plate XVII, figure 21); the third, like Figure 5*ll*, on one rim (Plate V, figure 11) and on bowls of two earthenware pipes (Plate XVII, figures 23, 24); and the fourth, like the third, except that the triangles were longer (Plate VI, figure 9), the design in figure 13, in the same plate, being variant. There were alternate blank plats on one rim fragment and on the pipe bowl in Plate XVI, figure 21 (*See* Figure 6*f*). The "hanging" triangles on the rim fragments in Plate V, figures 13 and 14 (which are parts of one rim), and Plate VI, figure 1, and on the pipe bowl in Plate XVI, figure 18 (seen "unrolled" in Figure 6*c*) are also to be noted. The lines in the plats forming part of the design on the pipe bowl in Plate XVI, figure 20, and Figure 6*g*, were curved.

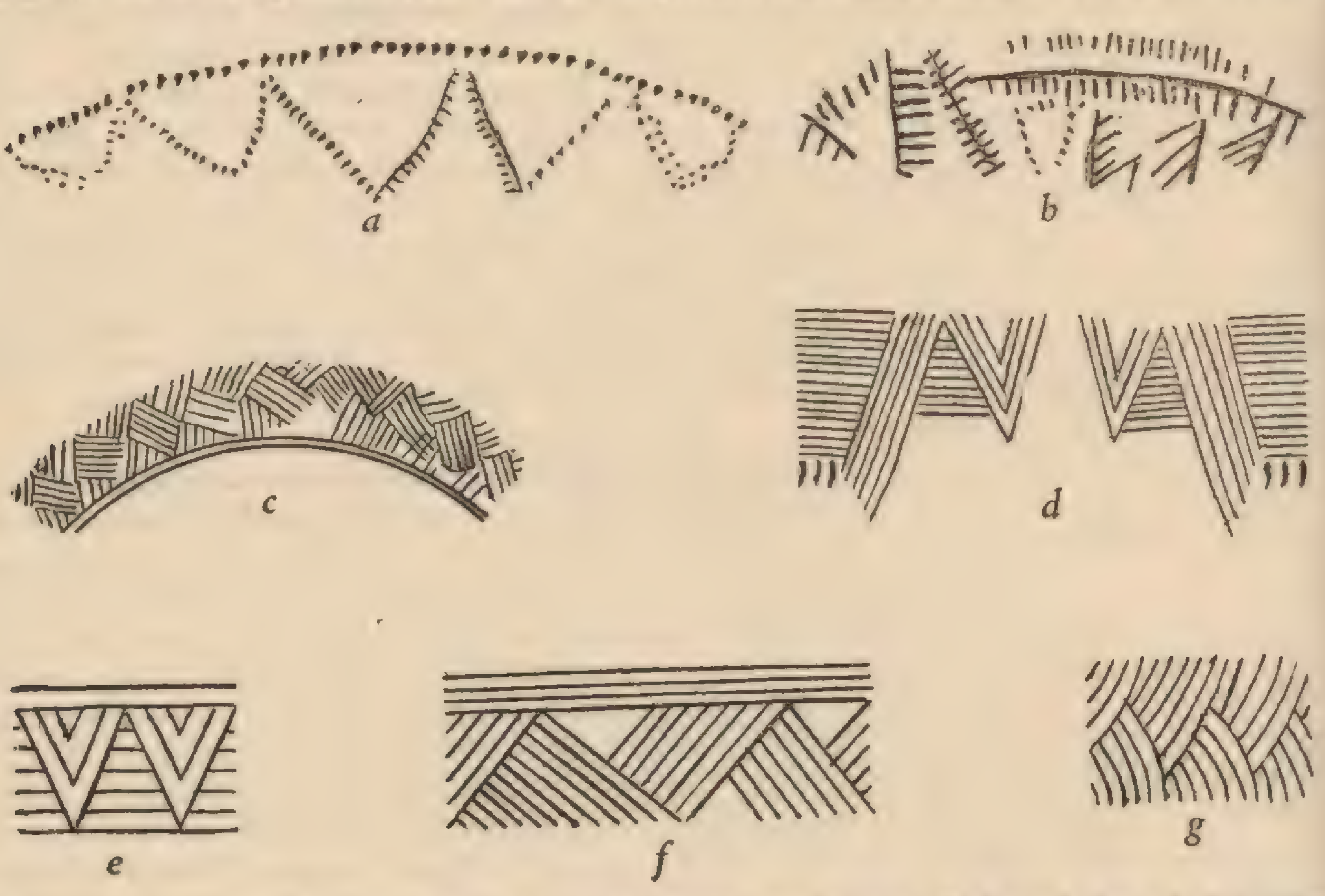

Figure 6. Decorative designs on earthenware pipes: *a*, festoon of almond-shaped depressions on four sides of bowl in Plate XVII, figure 25; *b*, complex design on bowl in Plate XVI, figure 14 ("unrolled"); *c*, complex design on bowl in Plate XVI, figure 18 ("unrolled"); *d*, design around top of bowl in Plate XVII, figure 26 ("unrolled"); *e*, schematic drawing of part of design on bowl fragment in Plate XVII, figure 15; *f*, schematic drawing of part of the design on bowl in Plate XVI, figure 21; and *g*, schematic drawing of part of the design on the bowl in Plate XVI, figure 20.

The decoration below the peaked parts of eight rims was interrupted by the introduction of elements unlike those on the rest of the rim. On two rims these consisted of groups of vertical lines (Plate V, figures 1, 17) and on six rims of concentric V's (Figure 5*ff*, *uu*, and Plate V, figure 5). The decoration below the peaks of other rims was more complex (*See* Figure 5*rr*, *ss*, *vv*).

The pattern on the bowl fragment of a pipe in Plate XVII, figure 15, and Figure 6*c*, seemed to have consisted of two rows of interlocking V-shaped triangles, filled with smaller V's and horizontal lines in alternate plats. Similar figures form part of the design around the top of the pipe bowl in Plate XVII, figure 26, which is shown "unrolled" in Figure 6*d*.

In twenty-seven specimens there were V-shaped figures below the peaked parts of the rims. The triangular space formed by the converging lines was either left blank (Plate V, figure 12; Plate VI, figure 12; and Plate VII, figure 8), or, as on eighteen rims, filled with other decorative elements. These included a triangular group of three circles on one rim (Plate IX, figure 1) and similar triangular groups (one of which is upside down) of circular (Plate VII, figures 12, 15), oval (Plate VII, figure 10), almond-shaped (Plate VII, figures 9, 11), and lenticular elements on eight others (Plate VII, figures 13, 14). On another rim was a row of oval and two rows of lenticular elements across the top (Plate VII, figures 1, 3), the latter with a large X-like figure below. There are similar V-shaped figures on seven neck fragments. The figures were upside down on five rims, three being blank (Cat. Nos. VIII-F-24457*c*, *d*, VIII-F-24797*i*, Plate VI, figure 10, and Plate VII, figure 6), one partly filled with horizontal lines (Cat. No. VIII-F-24456*c*), and one enclosing an inverted triangular group of roughly oblong elements with a horizontal row of short vertical elements near the top and one at the bottom (Plate VIII, figure 7). There was a V-shaped figure with a vertical line through the middle on two rim fragments in Plate VI, figure 2. Long diagonal lines, which may be one set of the converging lines forming similar V-shaped figures, occurred on four neck fragments (Cat. Nos. VIII-F-24797*n* and VIII-F-24798*k*, and Plate VIII, figures 2, 5), and the apices remained on two other neck pieces (Cat. Nos. VIII-F-24348*l* and VIII-F-24359*s*).

The unusual design on the pipe bowl in Plate XVI, figure 14, was crude (seen "unrolled" in Figure 6*b*).

There were only a few life forms, most of them being conventionalized representations of the human face consisting of a triangular group of circular, oval, lenticular, and almond-shaped depressions and stamped circles, all of which presumably were intended to represent the eyes and mouth (*See* Plate VII, figures 9 to 15, and Plate IX, figure 1). The human face mask from the side of a bowl of an earthenware pipe in Plate XVII, figure 19, is the only one modelled in the round. The upper part of the face is in intaglio, the eyes being represented by raised disks with a pit in the centre. The mouth is indicated by a deep, lenticular depression. The occurrence of this face here suggests that the people of the site probably used larger wooden masks in their ceremonies.

The only animal form, which may have been intended for an otter or a lizard, although the angular head and feet also suggest a turtle, is represented as crawling up the front of the bowl (Plate XVII, figure 26). The stem is missing and with it the tail, which extended along the bottom as in other animal representations on pipes,[1] of which several have been described and illustrated by Boyle,[2] Laidlaw,[3] and the author.[4] The eyes are represented by circular pits, and the mouth by a groove on both sides of the snout. The edges of the body are bordered with lines and short transverse depressions.

DECORATIVE ART ON WOODLAND POTTERY

As the Woodland pottery from the Middleport site was intrusive, its decoration is considered separately.

Most of the decoration is similar to that on other Woodland pottery from southwestern Ontario (*See* Plate XI, figures 1 to 3, 5, 9, 11, 13, 14), but some of the designs are unlike any others that the author has seen (Plate XI, figures 4, 8, 12, 15).

The elements used in the decoration of the Woodland pottery from the Middleport site are as follows: punctate, as on one rim; deep, circular pits, as on the outside of ten rims, which formed low nodes on the inside in most cases (Plate XI, figures 1 to 4, 9, 15); nodes on the outside of one rim produced by punching holes from the inside (Figure 6); roughly oblong impressions produced by using a cord- or sinew-wound loop end-on as a stamp, as on three (?) rims; and vertical, as on the outside of thirty-one rims (figures 1, 2); diagonal, as on the outside of nine and inside of eight rims (figures 3, 4, 15); and horizontal rows of impressions produced with cord- or sinew-wound twigs, as on twenty-four rims (figures 1 to 4, 13 to 15). These elements were either used by themselves, as on the lip edges of eleven rims (figures 1 to 3, 9), or were combined with other elements to form more or less complex patterns.

The complex pattern on two rims consists of a band of vertical rows of impressions, followed by a band of horizontal rows of impressions, like the one in Figure 5*h*, except that there is an encircling row of circular holes (Plate XI, figures 1, 2). The designs on six rims were somewhat like the one in Figure 5*i*, except that there was a row of circular holes on four (Plate XI, figures 3, 4). There were pinnate designs on two rims, which were combined with other elements (Plate XI, figure 15). Another pattern on one rim consisted of vertical and diagonal rows of impressions, one below the other. The decoration on the necks of the two pieces in Plate XI, figures 4 and 15, is unusual.

BURIALS

No burials were discovered by the author, but in 1912 Sir Francis Knowles and the late F. W. Waugh excavated an ossuary northeast of the refuse deposits (*See* Figure 1). The ossuary was almost circular and 8 to 9 feet in diameter. At the north side of the pit the deposit of bones was 2½ feet deep, and on the south side, where the pit seemed slightly elongated, it was much shallower and rose gradually in an inclined plane to the surface. At a depth of 8 inches to 1 foot, halfway up the inclined surface, was a burnt or partly cremated burial (Cat. No. VIII-F-8725), comprising fragments of a skull, the lower jaw, femora, tibiæ, an ulna, radii, a calcaneum, ribs, vertebræ, and fibulæ of a child or an adolescent. Small pieces of charcoal were intermingled with the bones. Found near the burnt burial were a chip of grey chert (Cat. No. VIII-F-8725), the oblanceolate blade in Plate I, figure 31, the tip of a broken chert arrowoint (Cat. No. VIII-F-8727), a hollow cylindrical bone bead (Cat. No. VIII-F-728), and four small discoidal shell beads (Cat. No. VIII-F-8729). About two undred and fifty bones were recovered, including two complete skulls[1].

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[1] Two earthenware pipes of which only the stems were found, from Elgin county, appear to have had similar animal forms modelled on the bowl, with the tail along the bottom of the stem. One from Bayham township (Cat. No VIII-F-5438, National Museum of Canada) appears to have had a short tail, for the hind feet were almost at the tip of the stem.

[2] 1891, fig. 15.

[3] 1914, pp. 56, 62 (top), 63, 64, 66; 1915, fig. 2; and 1916, fig. 7.

[4] 1931, Pl. XII, fig. 25.

The fact that the oblanceolate blade does not seem to be of Iroquois origin nd that, as mentioned on page 21, the shell beads found near the burnt burial ere of a kind usually associated with Woodland remains, suggests the posbility that the ossuary was not that of the people from the Middleport site, lthough Sir Francis Knowles found that the people who were buried in this ssuary were Iroquois, and the skeletal remains were very much like those of he people of the Roebuck site.

SCATTERED HUMAN BONES

Only two human bones, which appeared to have been boiled, were recovered rom the site, and the presence of so few is probably not sufficient to indicate hat the people practised cannibalism.

SUMMARY AND CONCLUSION

The Middleport village site resembled the Uren site in having refuse deposits cattered over a wide area. Unlike other Iroquois sites, however, it was located n the banks of a large river. Some of the deposits were deep. Part of the site long the river bank had been palisaded, as was indicated by a row of post noulds in one of the deposits. Apparently the inhabitants depended upon the ocal fauna and flora for their supplies of animal and vegetable foods, but the ractice of agriculture was limited, if we are to judge from the few carbonized orn kernels discovered. and the absence of beans and squash and sunflower seeds. Practically the same kinds of materials were used in the manufacture of implements and other objects as at other Iroquois sites in the same area. The only objects found in the site that had come from a great distance were the piece of native copper, and the marine shell made into beads. No articles of European origin was found, indicating that the site was prehistoric. The activities and customs of the people of the site were suggested by the kinds of artifacts found: securing of food by the projectile points of chert and antler, harpoon heads of antler, and net sinkers; preparation of food by a single mortar and two mullers (which seems to accord with the scarcity of corn, generally believed to have been ground with such implements), and pottery; the various occupations of men and women by ungrooved stone axes, stone adzes, stone chisel-like tools, sinew stones, chipped chert side scrapers, chipped drill points, hammerstones, stone anvils, antler chisels, antler chipping tools, chipped end scrapers, shell scrapers, shell smoothers, bone and antler awls, and bone netting-needles; dress and adornment by bone beads, shell beads, one made of a tooth, and earthenware beads, a stone pendant, a tooth pendant, and antler armlets; games and amusements by potsherd disks (a few perforated), and many possible units for cup-and-pin games derived from deer phalanges; and smoking by the pipes of stone and earthenware. There were also several objects of stone, bone, and antler that could not be assigned to any specific use.

The projectile points consisted of unnotched blades of various shapes (including a few that were oblanceolate), triangular points, stemmed points, and notched points. More than half of the points were triangular, all narrow and unlike the broad Woodland points of this type. Only a few points were stemmed. Most of the notched points had side notches, a few were corner-notched, and one had the notches on the basal edge. A few delicate points were derived from triangular points by notching the edges deeply, leaving a narrow neck and wide tangs. Some of the notched points were large and heavy and resembled some of the points from Woodland sites in this respect.

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[1] Cat. No. XIII-F-34 to XIII-F-110 (Physical Anthropology).

The pottery fragments belonged to vessels of five different types or shapes, viz., small and cup-like; with flaring rims; pear-shaped, with the rim rising more or less vertically from the shoulder; with rolled rims; and with overhanging collars.

The pottery was more fully developed than that from the Uren site in that more of it had overhanging collars, angular lips, and peaked elevations on the rims. Some of it was not as fully developed as that at the Lawson site. Only one pot had a deeply constricted neck. Most of the shoulders were uniform in thickness with the neck; others were distinctly carinated. All of the pots appeared to have had rounded bottoms. The markings left by the tools used in malleating the clay were like those on pottery from the Uren site, some pieces being cord-roughened, scarified, or marked with malleating paddles having ribbed or chequered surfaces. The clay of which the pots were made contained fine, medium, or coarse grit tempering, most of the pots having medium, and the next largest number fine, tempering. None of the ware was shell-tempered. The surface hardness varied from 2 to 4·5, most pieces being 2·5.

Most of the pottery was decorated. There was less decoration on the lip edges than at the Uren site, and less extensive decoration of the inside, but one edge was unusual in having a chevron design around the inside. There was less decoration on the shoulders than at the Lawson and Roebuck sites and none of the decoration extended below the shoulder. A few rims bore a row of nodes formed by punching holes from the inside. Very little of the pottery exhibited traits that could have been borrowed from Woodland, but these may have had their inception at sites of the Uren type or archaic period. About one hundred and fifty fragments of pottery were Woodland, some of which appeared to have been left before the Iroquois inhabited the site. A few of the pots appeared to have had nearly straight sides with slightly everted lips. The necks of others were constricted, giving a more decided flare to the rims. One pot seemed to have had a pointed base. The outside surface of a few pots was cord-roughened. None of the pots appeared to have been made by the coiling process. The pottery contained grit tempering. The surface hardness ranged from 2 to 3, but the majority were 2·5. The decorative technique consisted of impressing with cord- or sinew-wound straight rods or twigs, stamping with cord- or sinew-wound twig loops, and punching circular holes into the outside. A few pots seemed to have had all-over decoration.

One of the three fragmentary stone pipes was a divergent form of monitor made of serpentine, which was certainly of Woodland provenience. The second was apparently a monitor pipe also, but of uncertain type; and the third was too badly broken to permit recognition of the type.

There were many earthenware pipes, the stems of which either tapered gradually or rapidly from their junction with the bowl of the mouthpiece. A few had flaring mouthpieces, and they were roughly circular, half-round, oval, ovoid, oblong, lenticular, triangular, or curvilinear-triangular in cross-section. The bowls were cylindrical, ovoid, conoid, vasiform or urn-shaped. Some of the pipes were different from those in nearby sites of a later period. Only a few call for special comment.

Most of the conoid bowls consisted of straight cones and a few were convex. Massive conoid bowls, usually elaborately decorated, seem peculiar to sites of this period. No pipes were of the trumpet type, with high bowls and thin, gracefully flaring lips, common in other Iroquois sites, especially Roebuck. One of the conoid bowls with thin, slightly flaring walls, suggested a step in the development of the trumpet from the conoid type. One of the cylindrical bowls had an animal form modelled on one side. Some of the short barrel-shaped bowls, oval in lateral cross-section, which, like the massive conoid, seem peculiar to transitional period sites, were elaborately decorated. One other pipe, a modified monitor, with pointed heel and short stem, and with its sides extending beyond the bottom of the bowl, resembled pipes from Woodland sites in New York, and was probably of Woodland origin. The presence of this pipe, the stone monitor pipe, and the Woodland pottery mixed with Iroquois material in one of the deposits, seems to suggest the contemporaneity of the Woodland and Iroquois occupation in this area.

Only a few of the artifacts of unknown use call for special comment.

Here, as at the Uren site, were found a few stone objects with a sharp cutting edge on one of the long sides. A hollowed proximal phalanx of a moose may have been used as a pipe, although its sides presented no signs of scorching. A few flute-like objects made from bird bones, with from two to four vent-like holes on one side, may have been whistles. Two such unfinished objects were unusual in that they were derived from tibiæ of small mammals.

A few antler artifacts were unlike any other objects made of this material from Iroquois sites. One with the tip rubbed to a sharp, chisel edge had a deep hollow in the side, which may have served as a finger rest while it was in use. One antler tine had a shallow cleft in one side of the tip, which may have been intended as a seat for some sort of tool held in place by lashing. A large tool made from the beam of an antler had a pointed end and was like several specimens from the Roebuck village site.

Decorative art was almost exclusively geometrical and mostly rectilinear, only a few curved lines occurring on pottery and earthenware pipes. Although decoration composed solely of elements of one kind survived, the number of complex designs composed of two or more different elements, including chevrons, had greatly increased. Pinnate designs, common on Uren pottery, were rare at Middleport. One kind of decoration, consisting of a row of vertical or diagonal lines slanting to right and left around the rim, formed the sole decoration on many pots, and later became the preponderant kind of decoration on pottery at the Lawson village site. A few rims were decorated with embossed nodes, a survival from the earlier period of development, which disappeared during the transitional period. The conventionalized representation of the human face, or perhaps rather the eyes and mouth, consisting of triangular groups of depressions, which seemed to have had their inception on pottery at the Uren site, still persisted. The depressions on one pot were replaced by triangular groups of stamped circles, which first occurred on Uren pottery. Only two life forms, both on pipes, were modelled in clay, one being a human face and the other a lizard-like animal form, which is represented as clasping the bowl, with its tail extending along the bottom of the stem.

There were very few of the scattered human bones so common at the Lawson and Roebuck village sites. The dead seem to have been buried in ossuaries, one of which was discovered at the site. No single graves were found.

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Plate I

Specimens Illustrating the Securing of Food

(½ natural size)

Figure 1. Ovoid blade chipped from dark grey chert. From trench 7. Cat. No. VIII-F-24667*b*.

Figure 2. Triangular point chipped from grey chert. From trench 7. Cat. No. VIII-F-24670*h*.

Figure 3. Triangular point well chipped from grey chert. From trench 7. Cat. No. VIII-F-24670*i*.

Figures 4 and 5. Triangular points chipped from grey chert. From trench 3. Cat. No. VIII-F-24367*h* and *k*.

Figure 6. Triangular point chipped from grey chert. From trench 4. Cat. No. VIII-F-24534*k*.

Figure 7. Triangular point chipped from grey chert. From general digging. Cat. No. VIII-F-8855*c*.

Figure 8. Triangular point, with convex edges, chipped from chert. From trench 3. Cat. No. VIII-F-24367*f*.

Figure 9. Slightly notched point chipped from grey chert. From trench 4. Cat. No. VIII-F-24534*h*.

Figure 10. Notched point chipped from white chert. Triangular in cross-section. From trench 3. Cat. No. VIII-F-24370*o*.

Figure 11. Notched point chipped from grey chert. From trench 7. Cat. No. VIII-F-24672*l*.

Figure 12. Notched point chipped from chert. From general digging. Cat. No. VIII-F-8792*e*.

Figure 13. Slightly notched crude point chipped from light blue chert. From trench 3. Cat. No. VIII-F-24370*k*.

Figures 14, 15, 16. Notched points chipped from grey chert. From general digging. Cat. Nos. VIII-F-8856, and VIII-F-8792*g* and *f*.

Figures 17, 18. Notched points chipped from grey chert. From trench 7. Cat. No. VIII-F-2467*j* and *i*.

Figure 19. Unusual notched point chipped from chert. From trench 3. Cat. No. VIII-F-24370*c*.

Figures 20, 21. Notched points chipped from chert. From trench 7. Cat. No. VIII-F-24672*n* and *d*.

Figure 22. Unusual notched point chipped from grey chert. From trench 7. Cat. No. VIII-F-24672*o*.

Figure 23. Notched point chipped from grey chert. From trench 9. Cat. No. VIII-F-24936.

Figure 24. Unusual point chipped from grey chert. From trench 7. Cat. No. VIII-F-24672*e*.

Figures 25, 26. Notched points chipped from grey chert. From trench 3. Cat. No. VIII-F-24370*p* and *h*.

Figure 27. Broken double-notched point chipped from grey chert. From general digging. Cat. No. VIII-F-8793*h*.

Figure 28. Notched point chipped from grey chert. From trench 3. Cat. No. VIII-F-24370*a*.

Figure 29. Rough oval blade chipped from grey chert. From trench 3. Cat. No. VIII-F-24389*n*.

Figure 30. Slender point chipped from grey chert. From trench 4. Cat. No. VIII-F-24533*c*.

Figure 31. Oblanceolate blade chipped from grey chert. From near burnt burial in ossuary. Cat. No. VIII-F-8724.

Figure 32. Pointed blade chipped from grey chert. From general digging Cat. No. VIII-F-8796.

Figure 33. Net sinker made from a limestone pebble. From trench 3. Cat. No. VIII-F-24373.

Figure 34. Knife blade chipped from grey chert. From trench 4. Cat. No. VIII-F-24533*d*.

Figure 35. Blade with peculiar stem, chipped from grey chert. From trench 3. Cat. No. VIII-F-24370*g*.

Figure 36. Cone-shaped antler arrow tip. From trench 5. Cat. No. VIII-F-24568*n*.

Figure 37. Cone-shaped antler arrow tip. From trench 3. Cat. No. VIII-F-24372*b*.

Figures 38, 39. Fragments of what were probably unilaterally barbed harpoon points of antler. From trench 7. Cat. Nos. VIII-F-24673*b* and *a*.

PLATE I

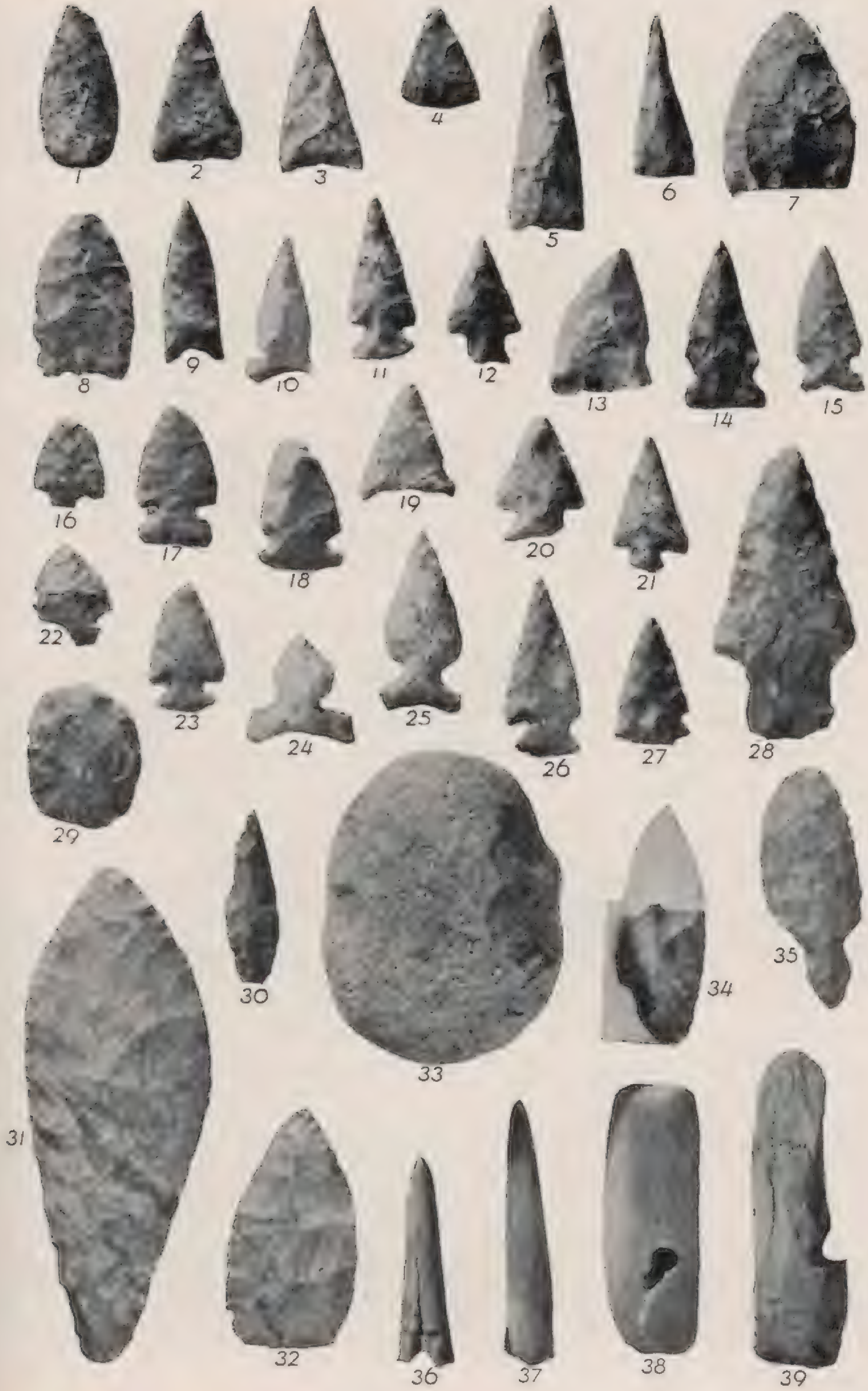
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Plate II

(½ natural size)

Body Fragments Showing Surface Finish of Pots

Figure 1. Fragment with what looks like cord roughening. From trench 8. Cat. No. VIII-F-24921*a*.

Figure 2. Fragment with paddle marking partly effaced by smoothing. From trench 8. Cat. No. VIII-F-24921*b*.

Figure 3. Fragment with ribbed paddle marking. From general digging. Cat. No. VIII-F-24969*k*.

Figure 4. Fragment with roughened surface. From general digging. Cat. No. VIII-F-24967*d*.

Figure 5. Fragment with paddle marking. From general digging. Cat. No. VIII-F-29470*e*.

Figure 6. Fragment with paddle marking. From trench 7. Cat. No. VIII-F-24798*l*.

Figure 7. Fragment with what seems to be ribbed paddle marking. From general digging. Cat. No. VIII-F-24969*l*.

Figure 8. Fragment with ribbed paddle marking. From trench 3. Cat. No. VIII-F-24515*e*.

Figure 9. Fragment with chequered paddle marking. From trench 8. Cat. No. VIII-F-24920*b*.

Figure 10. Fragment with partly obscured paddle marking. From general digging. Cat. No. VIII-F-24967*o*.

Figure 11. Fragment with paddle marking. From trench 3. Cat. No. VIII-F-24515*d*.

Figure 12. Fragment with markings. From general digging. Cat. No. VIII-F-24970*c*.

Figure 13. Fragment with rectangular, chequered marking. From general digging. Cat. No. VIII-F-24070*b*.

Figure 14. Fragment with what seems to be brush-combed surface. From trench 5. Cat. No. VIII-F-24613*n*.

Figure 15. Fragment with ribbed paddle marking. From trench 8. Cat. No. VIII-F-24927*f*.

Figure 16. Fragment with ribbed paddle marking. From general digging. Cat. No. VIII-F-24968*j*.

Figure 17. Fragment with paddle marking. From trench 7. Cat. No. VIII-F-24804*x*.

PLATE II

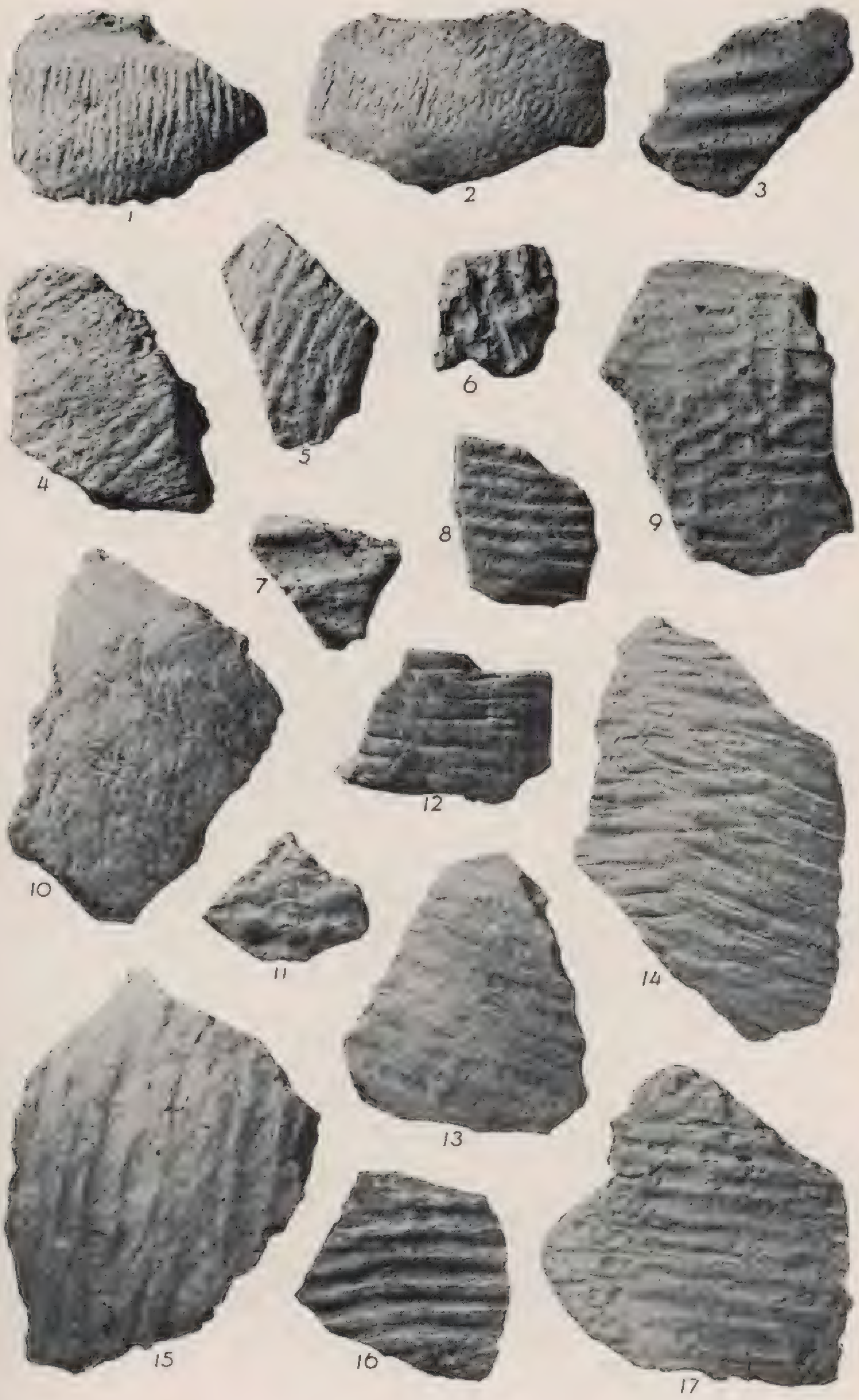


Plate III

Decorated Rim Fragments of Pots

(½ natural size)

Figure 1. From trench 8. Cat. No. VIII-F-24859*d*.

Figure 2. Fragment of small pot with simple decoration. From trench 8. Cat. No. VIII-F-24855*f*.

Figure 3. From trench 5. Cat. No. VIII-F-24585*c*.

Figures 4, 5, 6. From trench 3. Cat. Nos. VIII-F-24511*l* and *k*, and VIII-F-24487*k*.

Figure 7. From trench 2. Cat. No. VIII-F-24309*a*.

Figure 8. From trench 7. Cat. No. VIII-F-24756*b*.

Figure 9. From trench 3. Cat. No. VIII-F-24490*d*.

Figure 10. From trench 2. Cat. No. VIII-F-24310*f*.

Figure 11. From trench 3. Cat. No. VIII-F-24489*j*.

Figure 12. From trench 8. Cat. No. VIII-F-24867*a*.

Figure 13. From trench 7. Cat. No. VIII-F-24782*a*.

Figure 14. From trench 7. Cat. No. VIII-F-24752*a*. Cross-section in Plate XII, figure 39.

Figure 15. From trench 3. Cat. No. VIII-F-24482*a*.

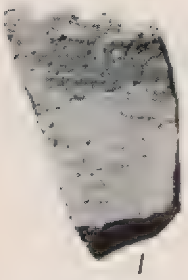
Figure 16. From trench 6. Cat. No. VIII-F-24633*c*.

Figure 17. From trench 3. Cat. No. VIII-F-24464*a*. Cross-section in Plate XII, figure 76.

Figure 18. From trench 7. Cat. No. VIII-F-24755*a*. Cross-section in Plate XII, figure 15.

Figure 19. From trench 8. Cat. No. VIII-F-24861*a*. Cross-section in Plate XII, figure 44.

PLATE III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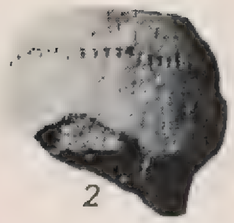
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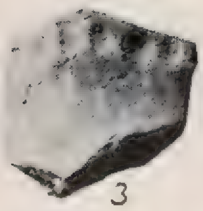
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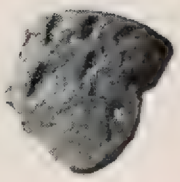
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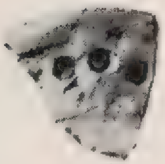
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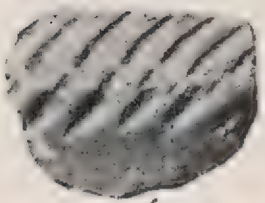
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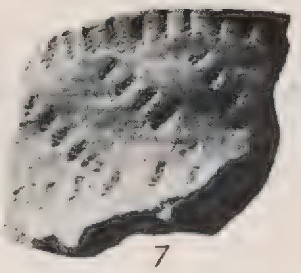
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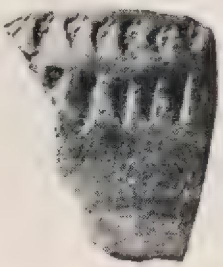
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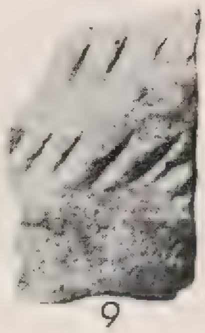
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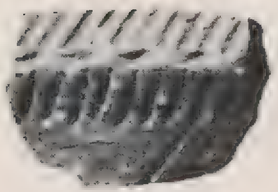
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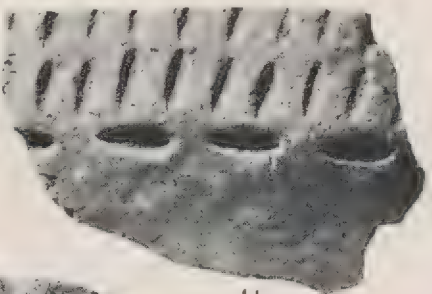
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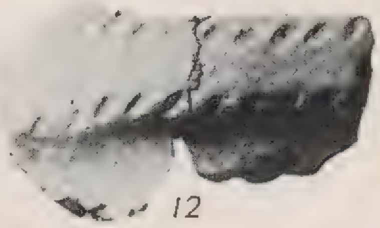
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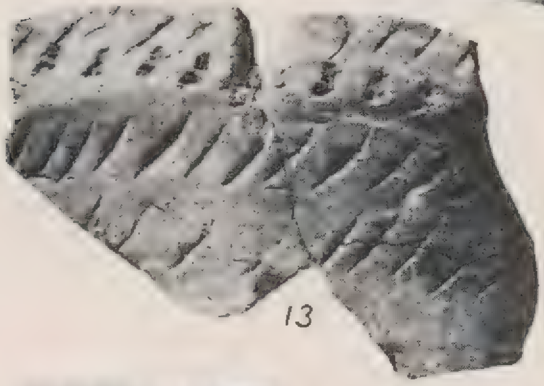
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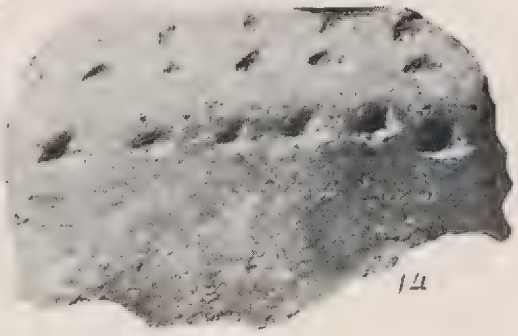
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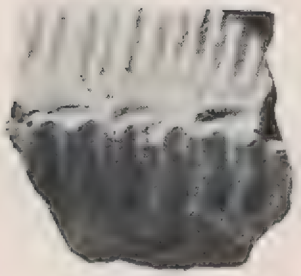
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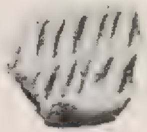
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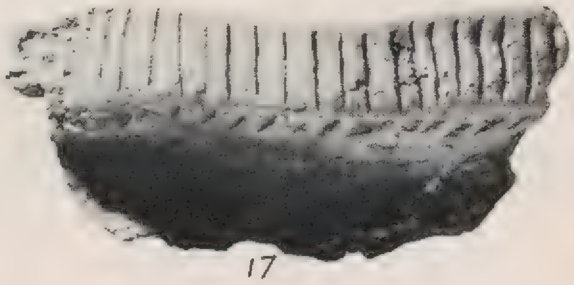
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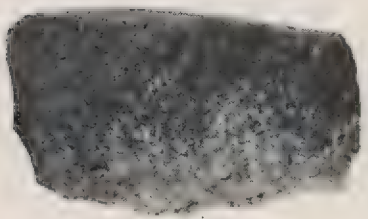
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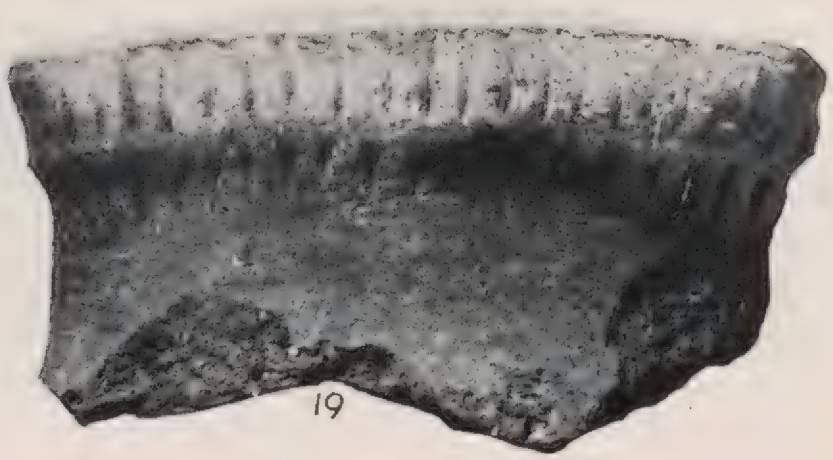
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Plate IV

Decorated Rim Fragments of Pots

(½ natural size)

Figure 1. From trench 2. Cat. No. VIII-F-24312*g*.

Figure 2. From trench 8. Cat. No. VIII-F-24897*u*.

Figure 3. From trench 7. Cat. No. VIII-F-24750*a*.

Figure 4. From trench 5. Cat. No. VIII-F-24592*b*.

Figure 5. From trench 3. Cat. No. VIII-F-24490*f*. Cross-section in Plate XII, figure 46.

Figure 6. From trench 2. Cat. No. VIII-F-24337*d*. Cross-section in Plate XII, figure 47.

Figure 7. From trench 7. Cat. No. VIII-F-24771*i*. Cross-section in Plate XII, figure 50.

Figure 8. From trench 2. Cat. No. VIII-F-24319*e*.

Figure 9. From trench 7. Cat. No. VIII-F-24773*y*.

Figure 10. From trench 2. Cat. No. VIII-F-24335*k*.

Figure 11. From trench 3. Cat. No. VIII-F-24480*a*. Cross-section in Plate XII, figure 22.

Figure 12. From trench 5. Cat. No. VIII-F-24606*a*.

Figure 13. From trench 3. Cat. No. VIII-F-24502*b*.

Figure 14. From trench 7. Cat. No. VIII-F-24773*l*.

Figure 15. From trench 2. Cat. No. VIII-F-24335*i*.

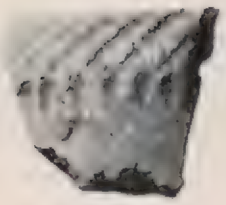
Figure 16. From trench 8. Cat. No. VIII-F-24900*a*.

Figure 17. From trench 5. Cat. No. VIII-F-24597*g*.

Figure 18. From trench 3. Cat. No. VIII-F-24468*n*.

Figure 19. From general digging. Cat. No. VIII-F-8859*b*.

PLATE IV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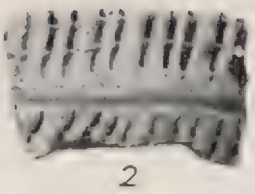
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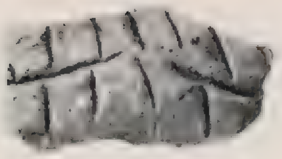
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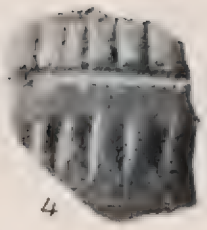
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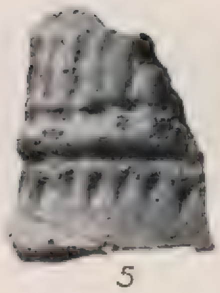
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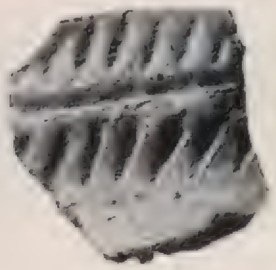
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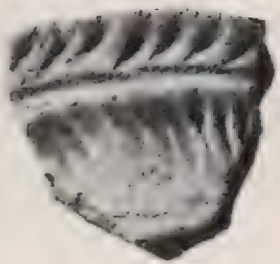
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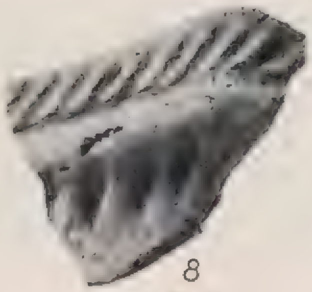
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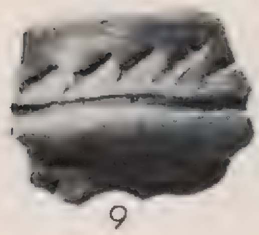
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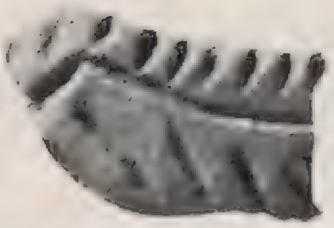
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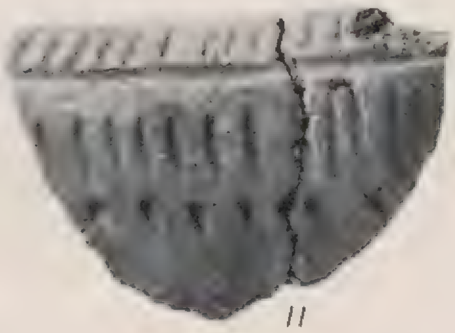
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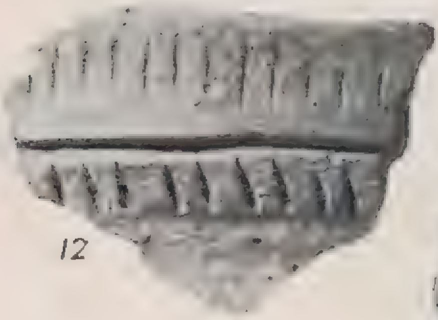
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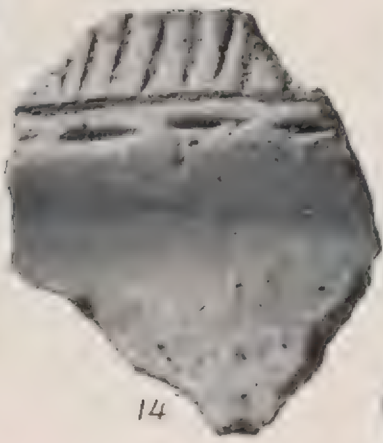
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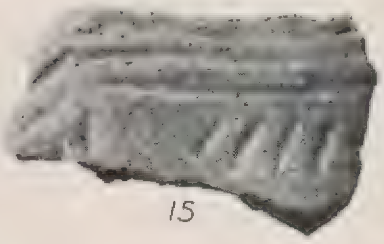
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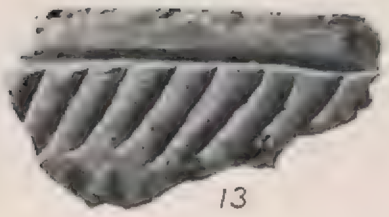
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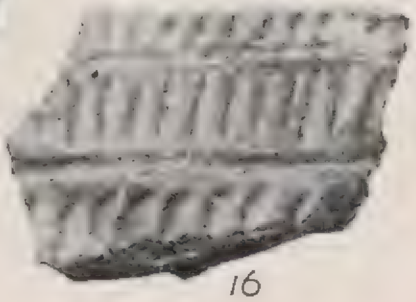
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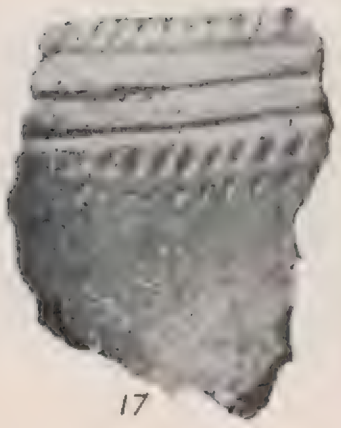
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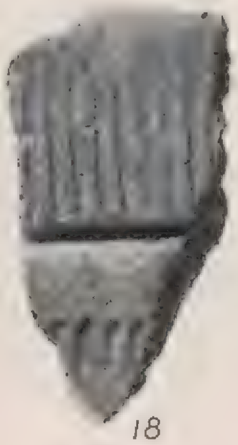
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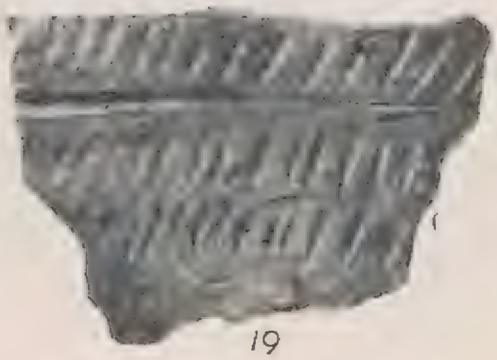
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PLATE V

Decorated Rim Fragments of Pots

(½ natural size)

Figure 1. From trench 7. Cat. No. VIII-F-24767*u*.

Figure 2. From trench 3. Cat. No. VIII-F-24576*m*.

Figure 3. From trench 7. Cat. No. VIII-F-24873*t*.

Figure 4. From trench 8. Cat. No. VIII-F-24897*t*.

Figure 5. From trench 3. Cat. No. VIII-F-24494*k*.

Figure 6. From trench 2. Cat. No. VIII-F-24307*b*.

Figure 7. From trench 8. Cat. No. VIII-F-24873*i*.

Figures 8, 9, 10, 11. From trench 3. Cat. No. VIII-F-24494*j*, *r*, *g*, and *n*.

Figure 12. From trench 6. Cat. No. VIII-F-24639*j*.

Figures 13, 14. From trench 8. Cat. No. VIII-F-24901*b*, *a*.

Figure 15. From trench 2. Cat. No. VIII-F-24335*e*.

Figures 16, 17. From trench 3. Cat. Nos. VIII-F-24490*c*, and VIII-F-24494*m*.

Figure 18. From general digging. Cat. No. VIII-F-24968*a*.

Figure 19. From trench 2. Cat. No. VIII-F-24335*d*.

Figures 20, 21. From trench 3. Cat. Nos. VIII-F-24450*a*, and VIII-F-24459*e*.

Figure 22. From trench 8. Cat. No. VIII-F-24897*a*.

PLATE V

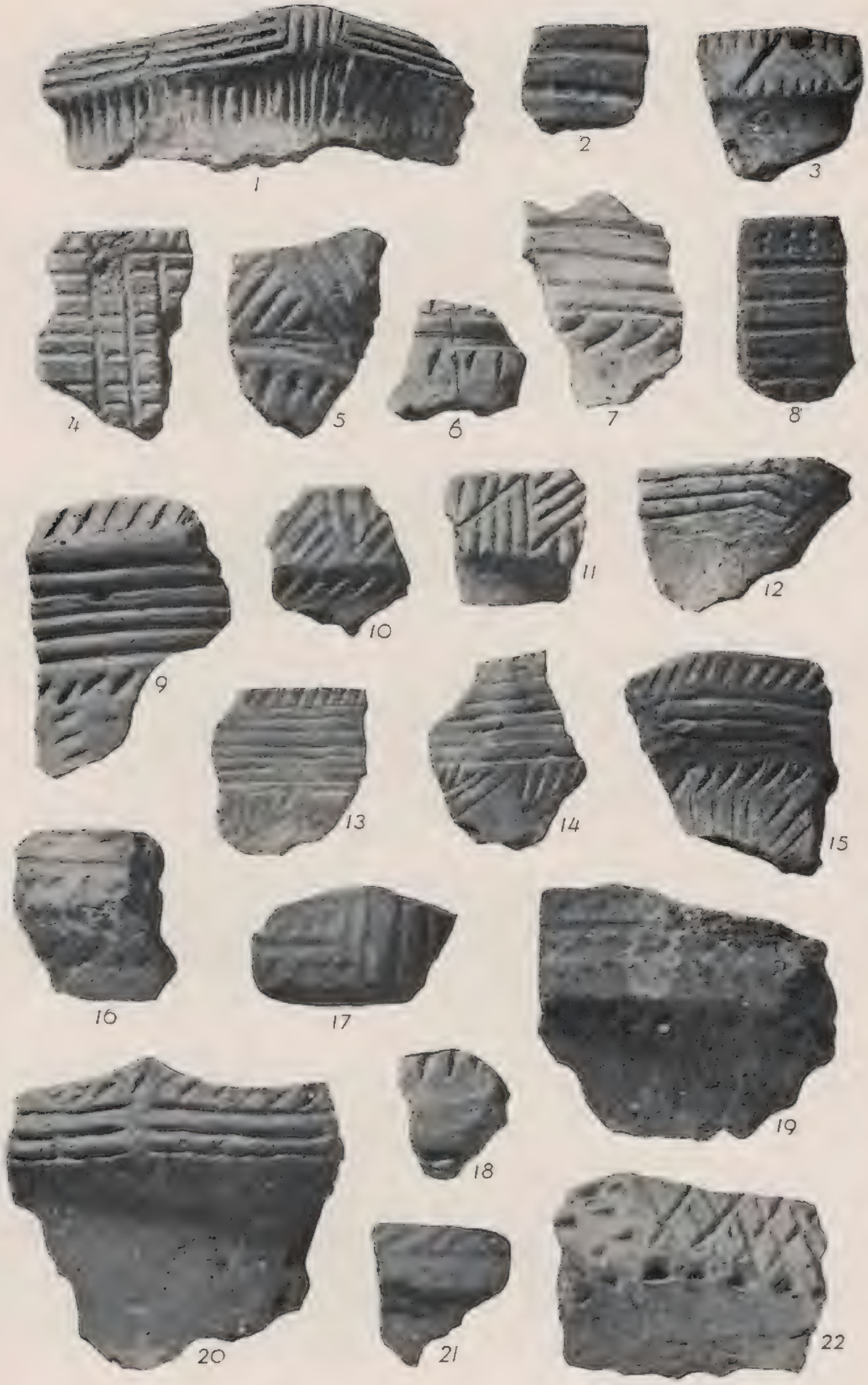


PLATE VI

Decorated Rim and Neck Fragments of Pots

(½ natural size)

Figure 1. From trench 7. Cat. No. VIII-F-24781*n*.

Figure 2. From trench 8. Cat. No. VIII-F-24882*a*. Cross-section in Plate XII, figure 73.

Figure 3. From trench 7. Cat. No. VIII-F-24781*o*.

Figure 4. From general digging. Cat. No. VIII-F-8833*d*. Cross-section in Plate XII, figure 77.

Figure 5. From general digging. Cat. No. VIII-F-8859*g*. Cross-section in Plate XII, figure 18.

Figure 6. From trench 2. Cat. No. VIII-F-24345*d*.

Figure 7. From trench 5. Cat. No. VIII-F-24603*g*.

Figure 8. From trench 7. Cat. No. VIII-F-24792*w*.

Figure 9. From trench 8. Cat. No. VIII-F-24897*x*.

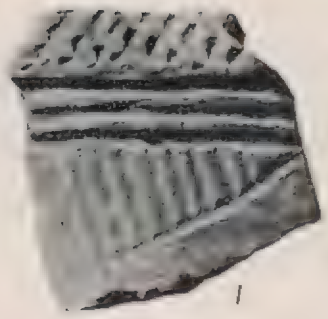
Figure 10. From general digging. Cat. No. VIII-F-8839*a*.

Figure 11. From trench 8. Cat. No. VIII-F-24897*h*.

Figure 12. From trench 8. Cat. No. VIII-F-24882*f*.

Figures 13, 14. From trench 7. Cat. Nos. VIII-F-24783*a* and VIII-F-24767*s*.

PLATE VI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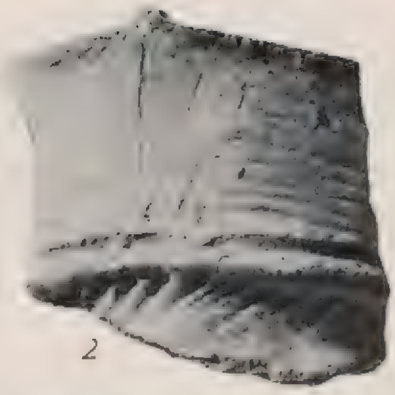
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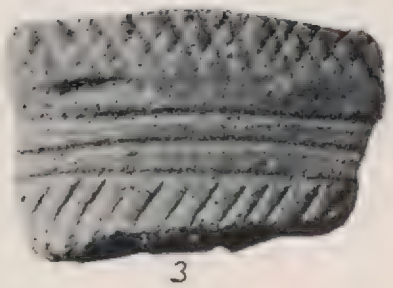
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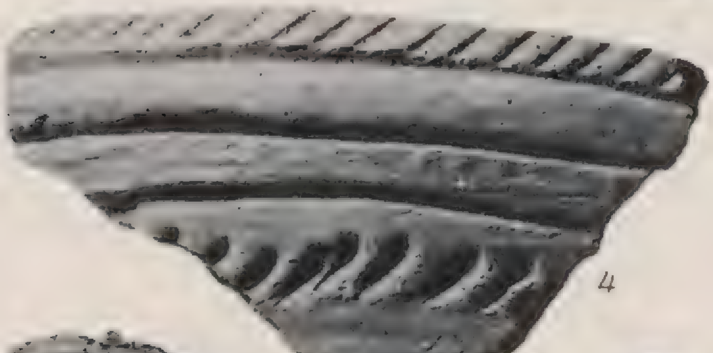
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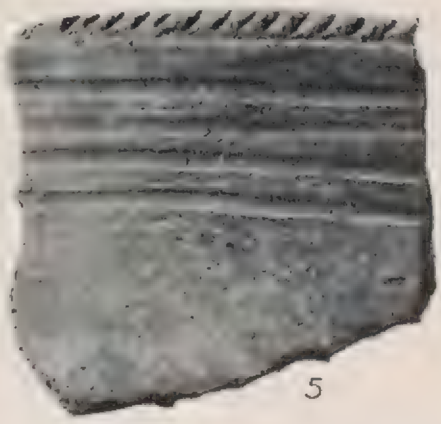
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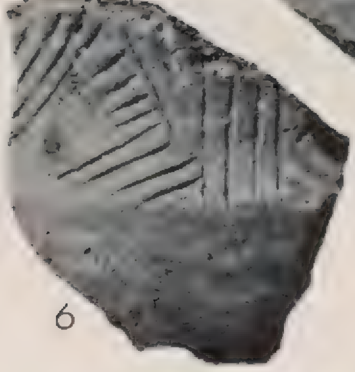
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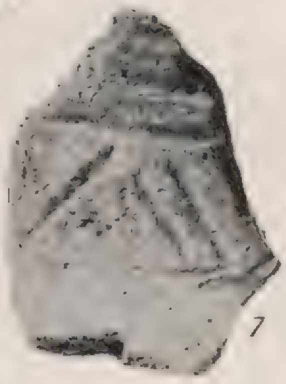
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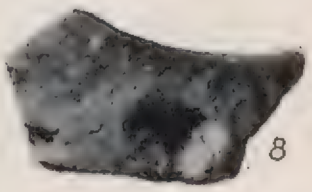
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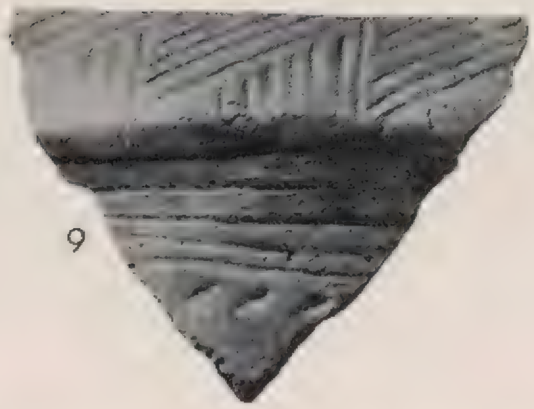
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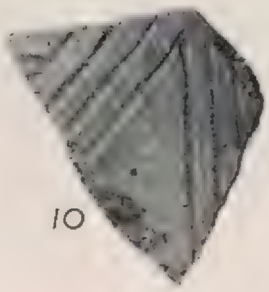
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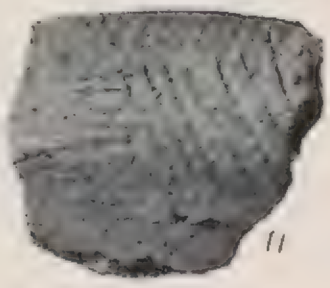
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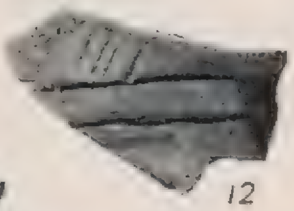
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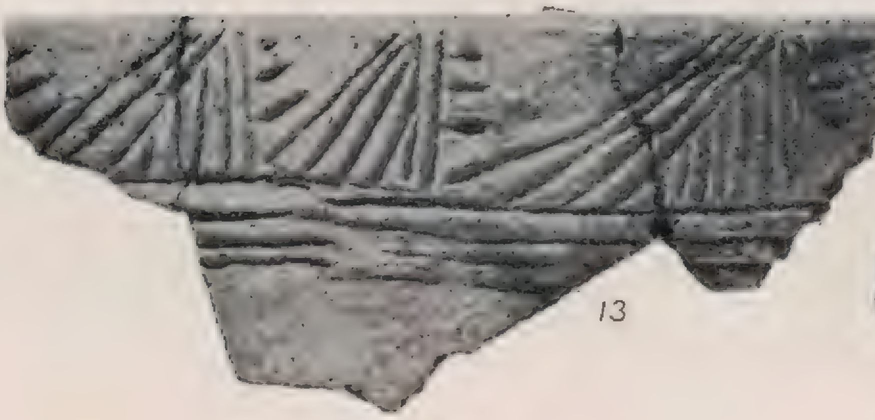
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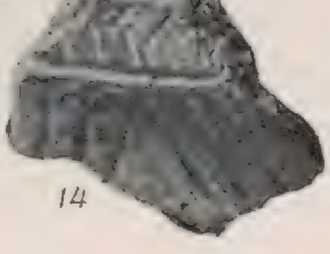
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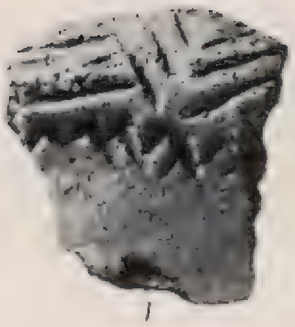
PLATE VII

Decorated Rim Fragments of Pots

($\frac{1}{2}$ natural size)

Figure 1. From general digging. Cat. No. VIII-F-8833*n*. Cross-section in Plate XII, figure 4.
Figure 2. From trench 7. Cat. No. VIII-F-24747*b*.
Figure 3. From trench 2. Cat. No. VIII-F-24323*a*.
Figure 4. From trench 7. Cat. No. VIII-F-24773*l*.
Figure 5. From trench 3. Cat. No. VIII-F-24494*p*.
Figure 6. From trench 1. Cat. No. VIII-F-24293*c*.
Figures 7, 8. From trench 2. Cat. Nos. VIII-F-24335*j* and VIII-F-24331*c*.
Figure 9. From trench 6. Cat. No. VIII-F-24640*a*.
Figure 10. From trench 5. Cat. No. VIII-F-24595.
Figure 11. From trench 4. Cat. No. VIII-F-24556*f*. Cross-section in Plate X, figure 23.
Figure 12. From trench 5. Cat. No. VIII-F-24575*a*. Cross-section in Plate XII, figure 23.
Figure 13. From trench 3. Cat. No. VIII-F-24499*a*.
Figure 14. From trench 6. Cat. No. VIII-F-24637*t*.
Figure 15. From trench 2. Cat. No. VIII-F-24324*a*.

PLATE VII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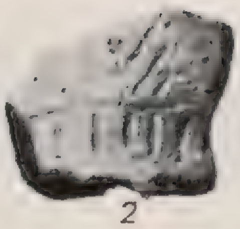
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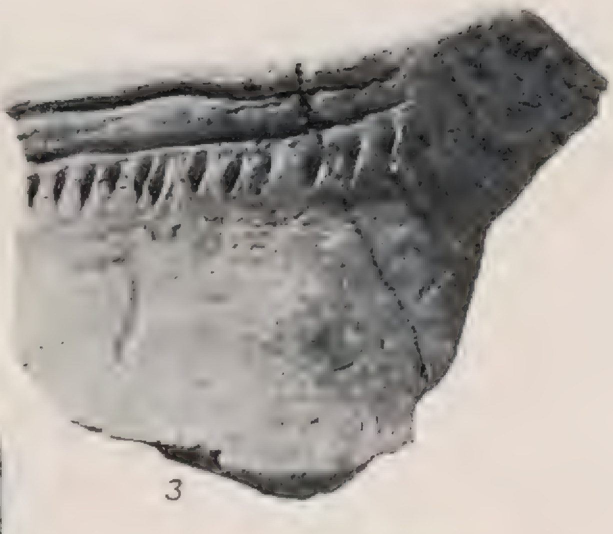
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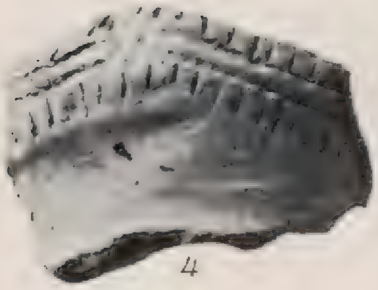
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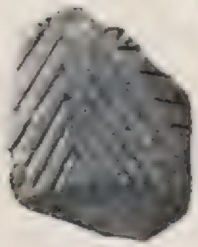
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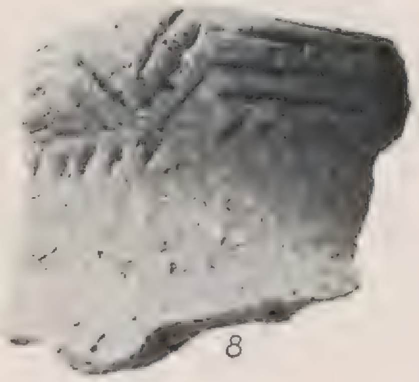
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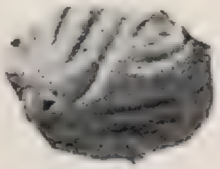
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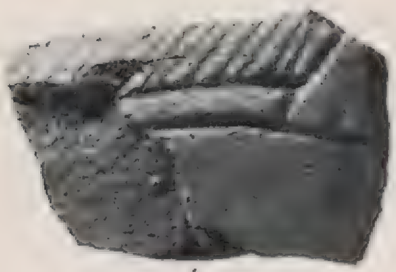
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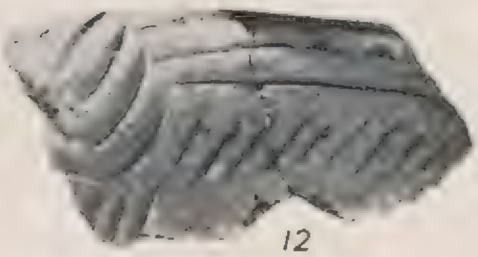
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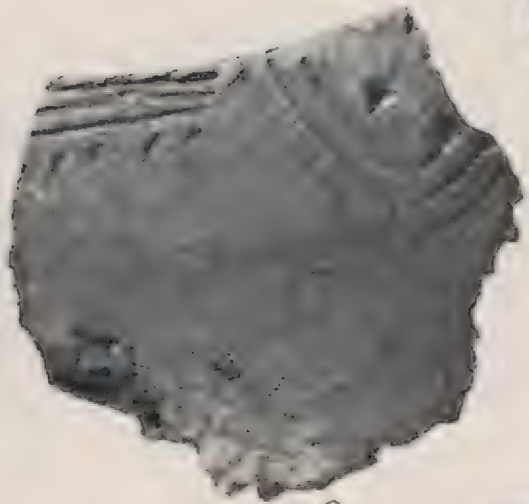
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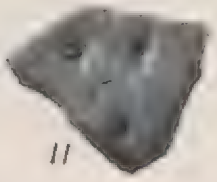
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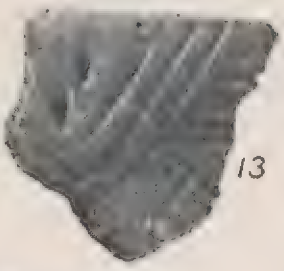
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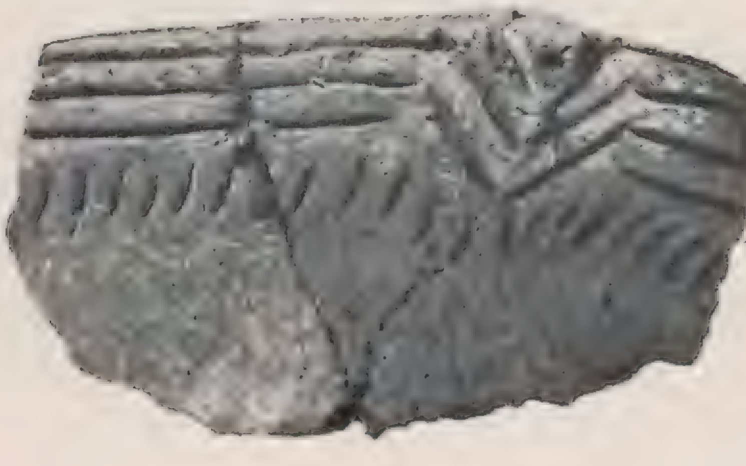
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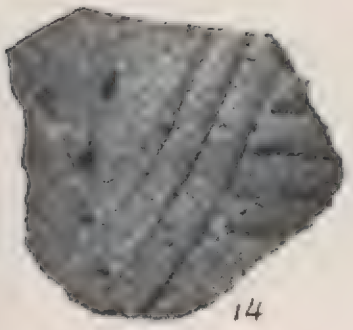
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Plate VIII

Decorated Rim Fragments of Pots

(½ natural size)

Figure 1. From general digging. Cat. No. VIII-F-8834*c*.

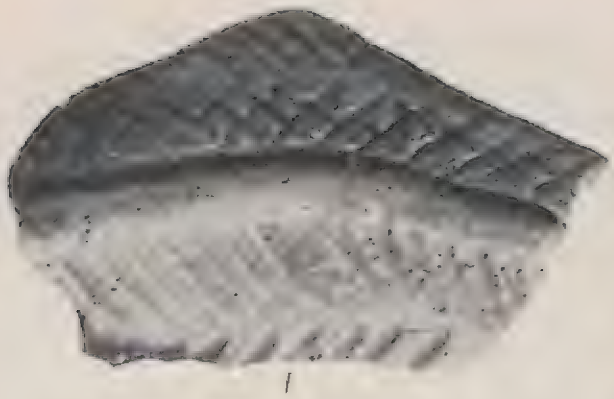
Figure 2. From trench 2. Cat. No. VIII-F-24337*c*.

Figures 3, 4. From trench 3. Cat. Nos. VIII-F-24468*a* and VIII-F-24503*a*.

Figures 5, 6. From trench 8. Cat. Nos. VIII-F-24893*a* and VIII-F-24868.

Figure 7. From trench 7. Cat. No. VIII-F-24777*a*. Cross-section in Plate XII, figure 75.

PLATE VIII



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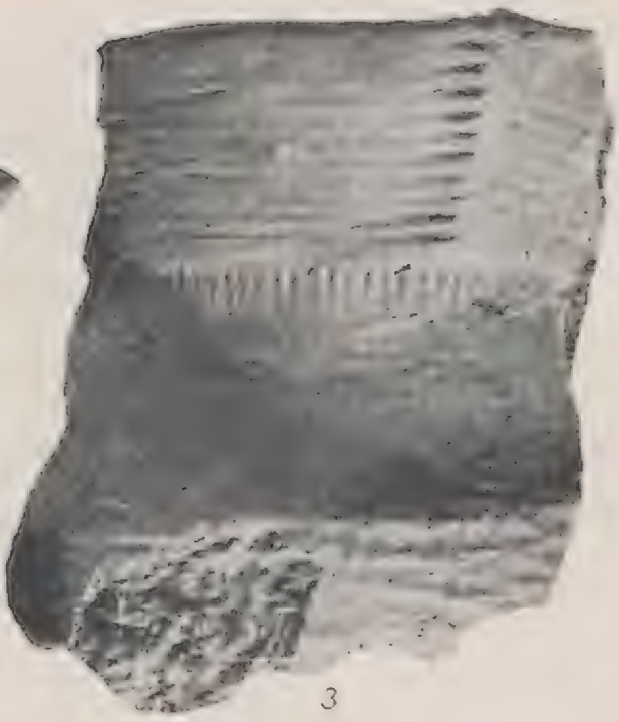

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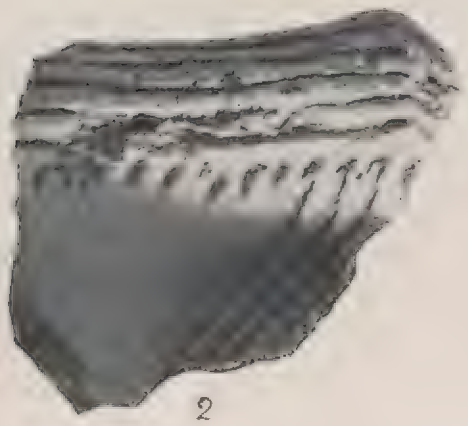

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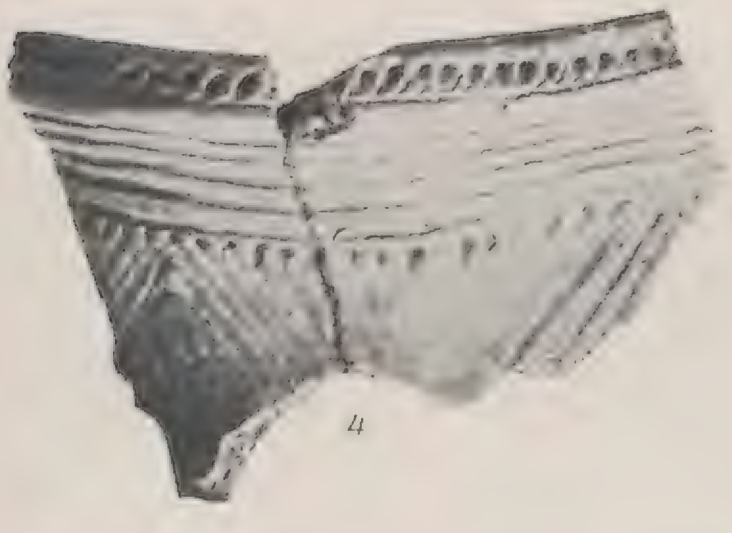

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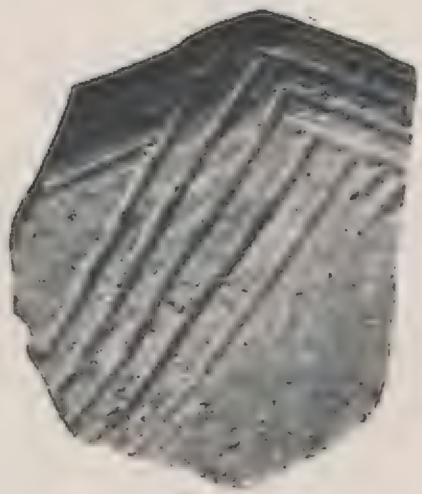

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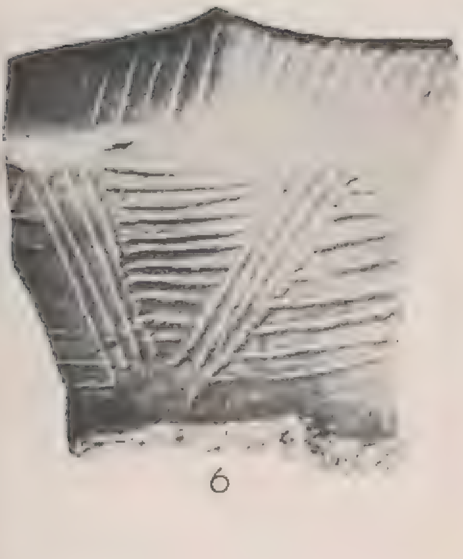

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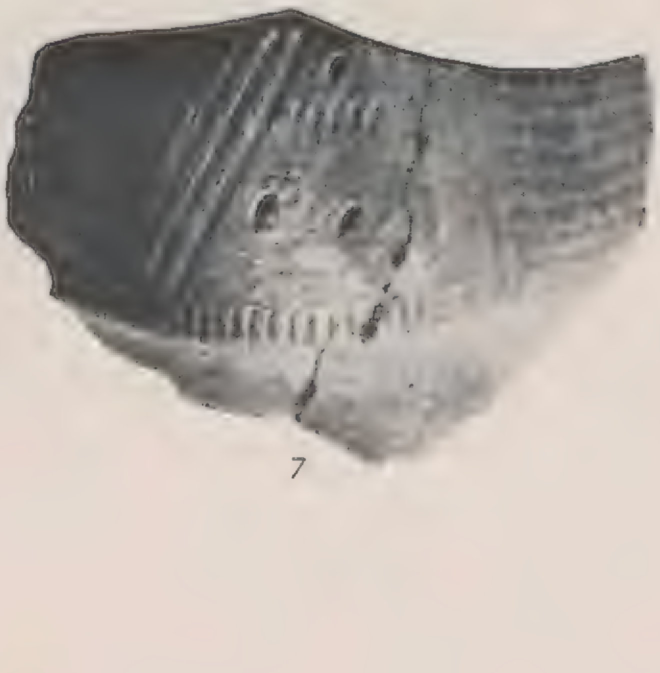

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Plate IX

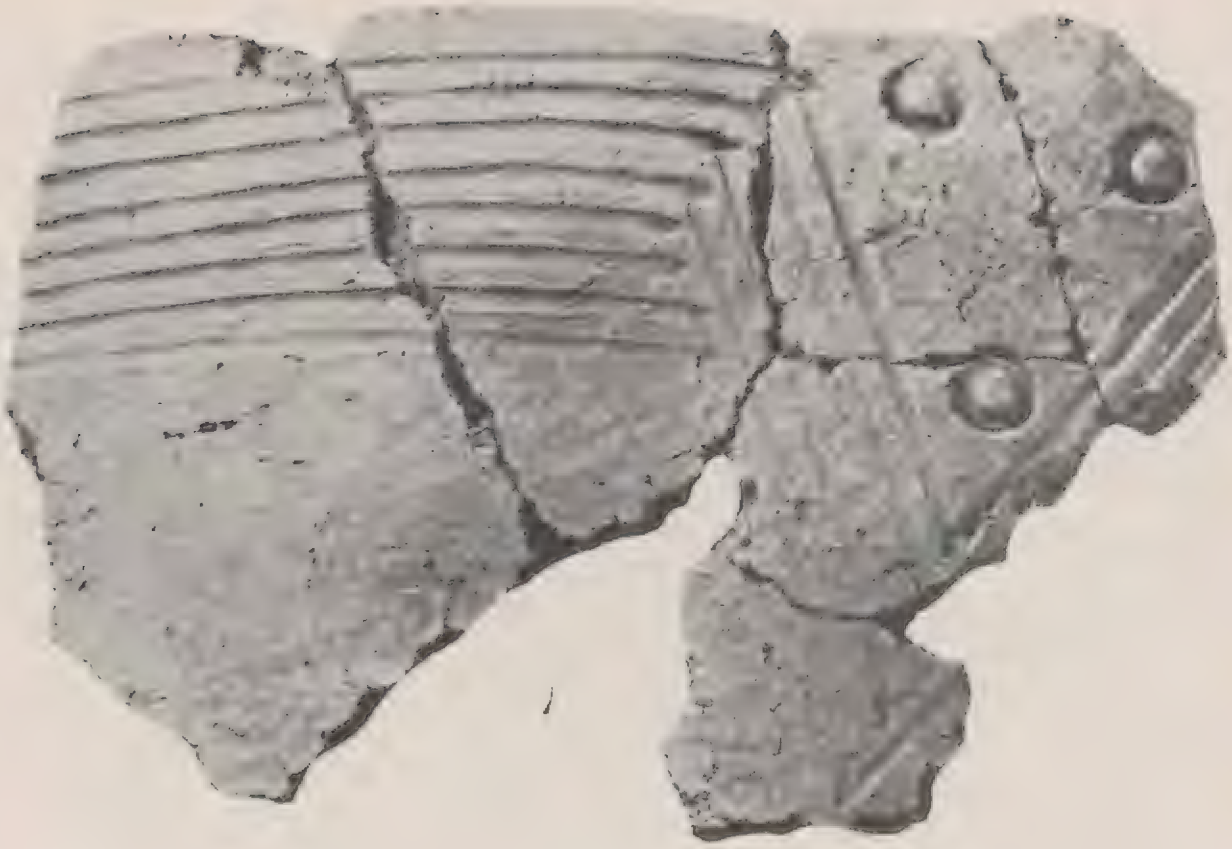
Pottery Fragments

(½ natural size)

Figure 1. Rim with impressed circles. From trench 3. Cat. No. VIII-F-24493*c*, *d*, *h*, *w*.

Figure 2. Partly restored rim. From trench 3. Cat. Nos. VIII-F-24320*a*, *b*; VIII-F-24461*c*, *e*; and VIII-F-24498*a*, *b*, *c*.

PLATE IX



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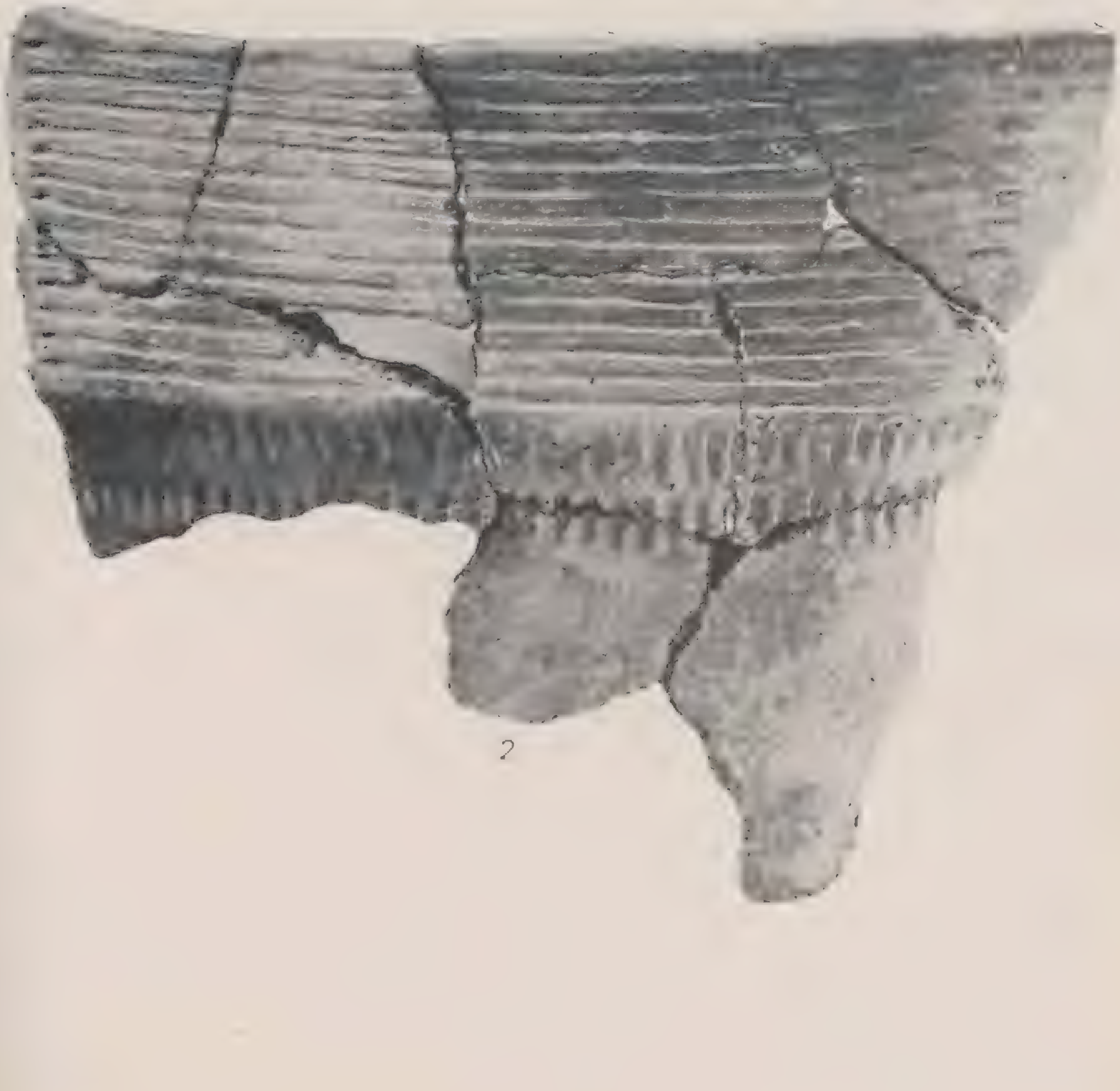

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PLATE X

Partly restored pot. From trench 3. Cat. Nos. VIII-F-24521, 24520.

Plate X

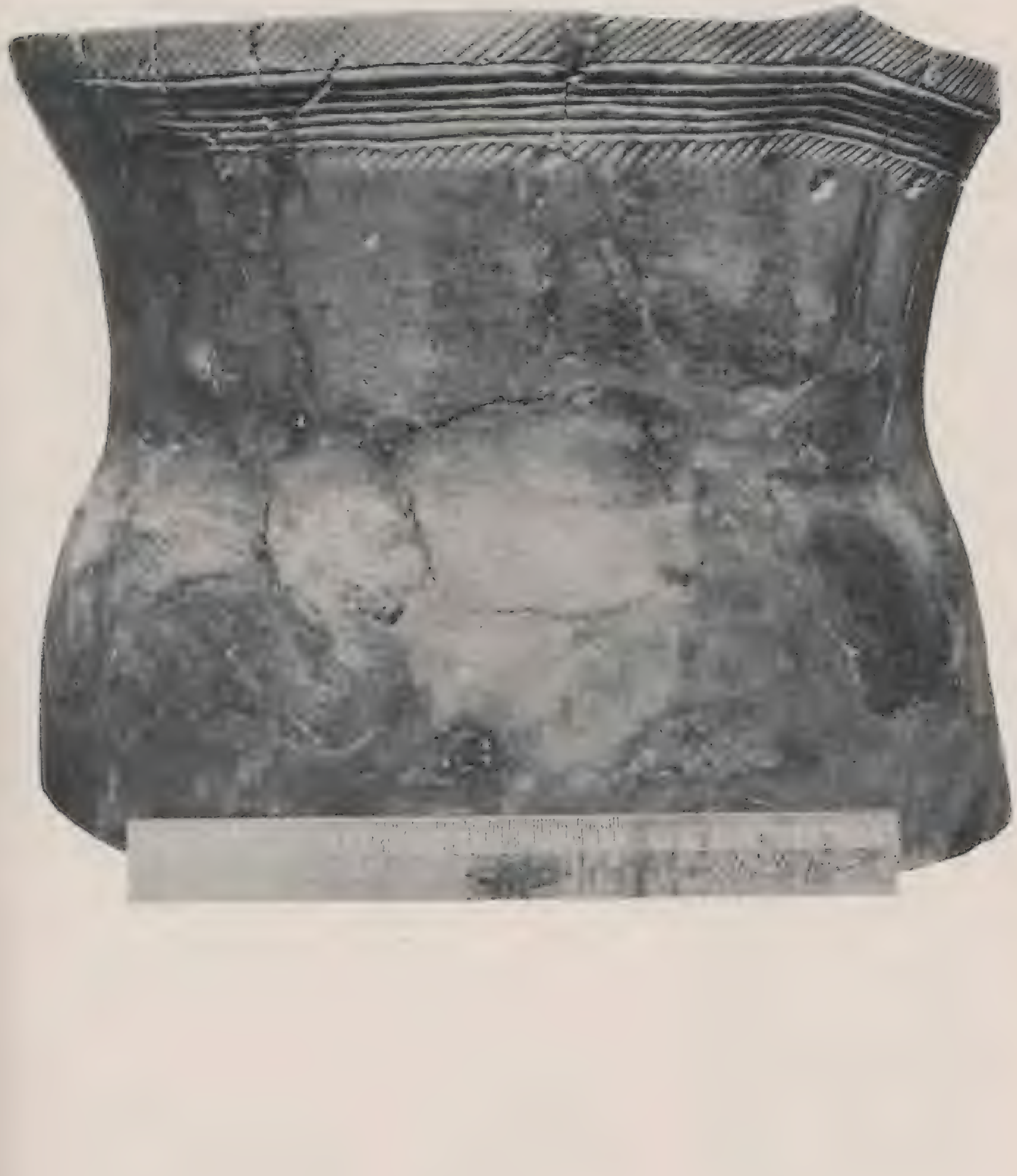

Plate XI

Decorated Fragments of Woodland Pottery

(½ natural size)

Figure 1. Rim fragment. From trench 7. Cat. No. VIII-F-24740*e*.

Figure 2. Rim fragment. From trench 7. Cat. No. VIII-F-24740*c*. Cross section in Plate XII, figure 90.

Figure 3. Rim fragment. From trench 7. Cat. No. VIII-F-24739*a*.

Figure 4. Rim fragment. From trench 7. Cat. No. VIII-F-24736*c*. Cross-section in Plate XII, figure 88.

Figure 5. Body fragment. From trench 7. Cat. No. VIII-F-24741*c*.

Figure 6. Rim fragment. From trench 7. Cat. No. VIII-F-24734*a*.

Figure 7. Inside surface of body fragment. From general digging. Cat. No. VIII-F-24967*h*.

Figure 8. Body fragment. From trench 4. Cat. No. VIII-F-24545.

Figure 9. Rim fragment. From trench 1. Cat. No. VIII-F-24294.

Figure 10. Body fragment with cord roughening. From trench 4. Cat. No. VIII-F-24552*g*.

Figures 11, 12. Body fragments. From trench 7. Cat. No. VIII-F-24741*i* and *j*.

Figure 13. Body fragment. From trench 2. Cat. No. VIII-F-24802*a*.

Figure 14. Body fragment. From trench 7. Cat. No. VIII-F-24735*k*.

Figure 15. Rim fragment. From trench 7. Cat. No. VIII-F-24740*b*.

PLATE XI

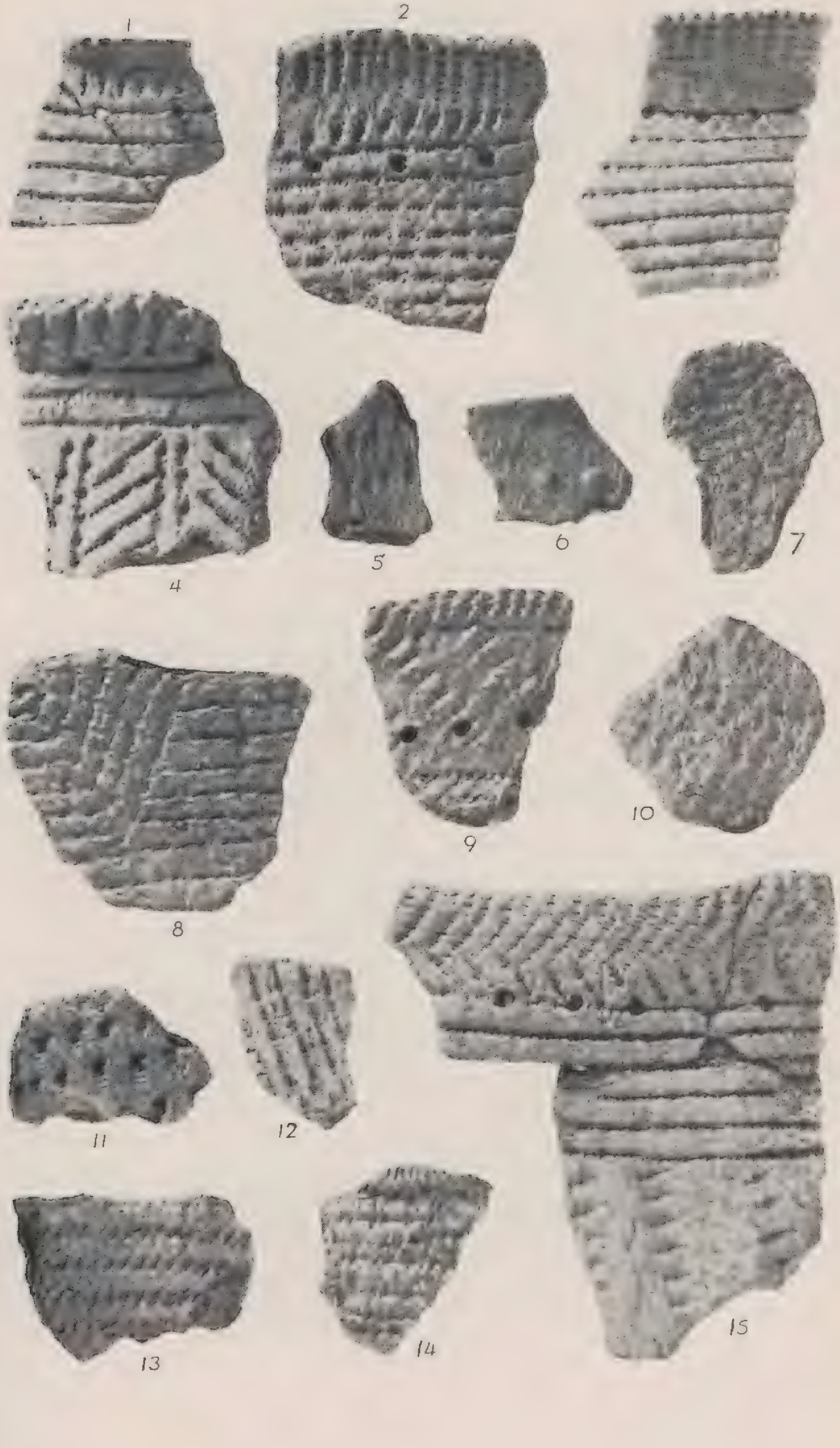

PLATE XII

Cross-sections of Pot Rims

(Outside surface at left)

Figure 1. Cat. No. VIII-F-24862*g*.
Figure 2. Cat. No. VIII-F-24489*h*.
Figure 3. Cat. No. VIII-F-24772*v*.
Figure 4. Of rim in Plate VII, fig. 1. VIII-F-8835*n*.
Figure 5. Cat. No. VIII-F-24469*p*.
Figure 6. Cat. No. VIII-F-24772*q*.
Figure 7. Cat. No. VIII-F-24781*v*.
Figure 8. Cat. No. VIII-F-24509*a*.
Figure 9. Cat. No. VIII-F-24760*q*.
Figure 10. Cat. No. VIII-F-24755*b*.
Figure 11. Cat. No. VIII-F-24774*u*.
Figure 12. Cat. No. VIII-F-24606*c*.
Figure 13. Cat. No. VIII-F-24759*i*.
Figure 14. Cat. No. VIII-F-24760*e*.
Figure 15. Of rim in Plate III, fig. 18. VIII-F-24755*a*.
Figure 16. Cat. No. VIII-F-24457*a*.
Figure 17. Cat. No. VIII-F-24491*c*.
Figure 18. Of rim in Plate VI, fig. 5. VIII-F-8859*g*.
Figure 19. Cat. No. VIII-F-24773*s*.
Figure 20. Cat. No. VIII-F-24583*h*.
Figure 21. Cat. No. VIII-F-24772*u*.
Figure 22. Of rim in Plate IV, fig. 11. VIII-F-24480*a*.
Figure 23. Of rim in Plate VII, fig. 12. VIII-F-24575*a*.
Figure 24. Cat. No. VIII-F-24950*l*.
Figure 25. Cat. No. VIII-F-24772*n*.
Figure 26. Cat. No. VIII-F-24774*n*.
Figure 27. Cat. No. VIII-F-24771*f*.
Figure 28. Cat. No. VIII-F-24764*w*.
Figure 29. Cat. No. VIII-F-24897*m*.
Figure 30. Cat. No. VIII-F-24493*a*.
Figure 31. Cat. No. VIII-F-24488*b*.
Figure 32. Cat. No. VIII-F-24475*b*.
Figure 33. Cat. No. VIII-F-24900*e*.
Figure 34. Cat. No. VIII-F-24599*b*.
Figure 35. Cat. No. VIII-F-24757*a*.
Figure 36. Cat. No. VIII-F-24952*a*.
Figure 37. Cat. No. VIII-F-24501*f*.
Figure 38. Cat. No. VIII-F-24874*y*.
Figure 39. Of rim in Plate III, fig. 14. VIII-F-24752*a*.
Figure 40. Cat. No. VIII-F-24605*w*.
Figure 41. Of rim in Plate VI, fig. 11. VIII-F-24897*h*.
Figure 42. Cat. No. VIII-F-24495*a*.
Figure 43. Cat. No. VIII-F-24789*a*.
Figure 44. Of rim in Plate III, fig. 19. VIII-F-24861*a*.
Figure 45. Cat. No. VIII-F-24862*p*.
Figure 46. Of rim in Plate IV, fig. 5. VIII-F-24490*f*.
Figure 47. Of rim in Plate IV, fig. 6. VIII-F-24337*d*.
Figure 48. Cat. No. VIII-F-24459*a*.
Figure 49. Cat. No. VIII-F-24494*f*.
Figure 50. Of rim in Plate IV, fig. 7. VIII-F-24771*i*.
Figure 51. Cat. No. VIII-F-24315*d*.
Figure 52. Cat. No. VIII-F-24479*g*.
Figure 53. Cat. No. VIII-F-24774*q*.
Figure 54. Cat. No. VIII-F-24783*c*.
Figure 55. Cat. No. VIII-F-24313*c*.
Figure 56. Cat. No. VIII-F-24874*v*.
Figure 57. Cat. No. VIII-F-24319*a*.
Figure 58. Cat. No. VIII-F-24331*a*.
Figure 59. Cat. No. VIII-F-24897*f*.
Figure 60. Cat. No. VIII-F-24860*v*.
Figure 61. Cat. No. VIII-F-24487*h*.
Figure 62. Cat. No. VIII-F-24574*a*.
Figure 63. Cat. No. VIII-F-24331*g*.
Figure 64. Cat. No. VIII-F-24795*a*.
Figure 65. Cat. No. VIII-F-24875*b*.
Figure 66. Cat. No. VIII-F-24860*y*.
Figure 67. Cat. No. VIII-F-24876*b*.
Figure 68. Cat. No. VIII-F-8860*c*.
Figure 69. Cat. No. VIII-F-24332*b*.
Figure 70. Cat. No. VIII-F-24332*a*.
Figure 71. Cat. No. VIII-F-24765*a*.
Figure 72. Cat. No. VIII-F-24873*p*.
Figure 73. Of rim in Plate VI, fig. 2. VIII-F-24882*a*.
Figure 74. Cat. No. VIII-F-24336*o*.
Figure 75. Of rim in Plate VIII, fig. 7. VIII-F-24777*a*.
Figure 76. Of rim in Plate III, fig. 17. VIII-F-24464*a*.
Figure 77. Of rim in Plate VI, fig. 4. VIII-F-8833*d*.
Figure 78. Cat. No. VIII-F-24740*a*.
Figure 79. Cat. No. VIII-F-24887*a*.
Figure 80. Cat. No. VIII-F-24436*a*.
Figure 81. Cat. No. VIII-F-8833*c*.
Figure 82. Cat. No. VIII-F-24314.
Figure 83. Cat. No. VIII-F-24946*a*.
Figure 84. Cat. No. VIII-F-24500*a*.
Figure 85. Cat. No. VIII-F-24767*c*.
Figure 86. Cat. No. VIII-F-24772*m*.
Figure 87. Cat. No. VIII-F-24760*a*.
Figure 88. Of rim in Plate XI, fig. 1. VIII-F-24736*c*.
Figure 89. Cat. No. VIII-F-24740*d*.
Figure 90. Of rim in Plate IX, fig. 2. VIII-F-24320*a*.

Plate XII

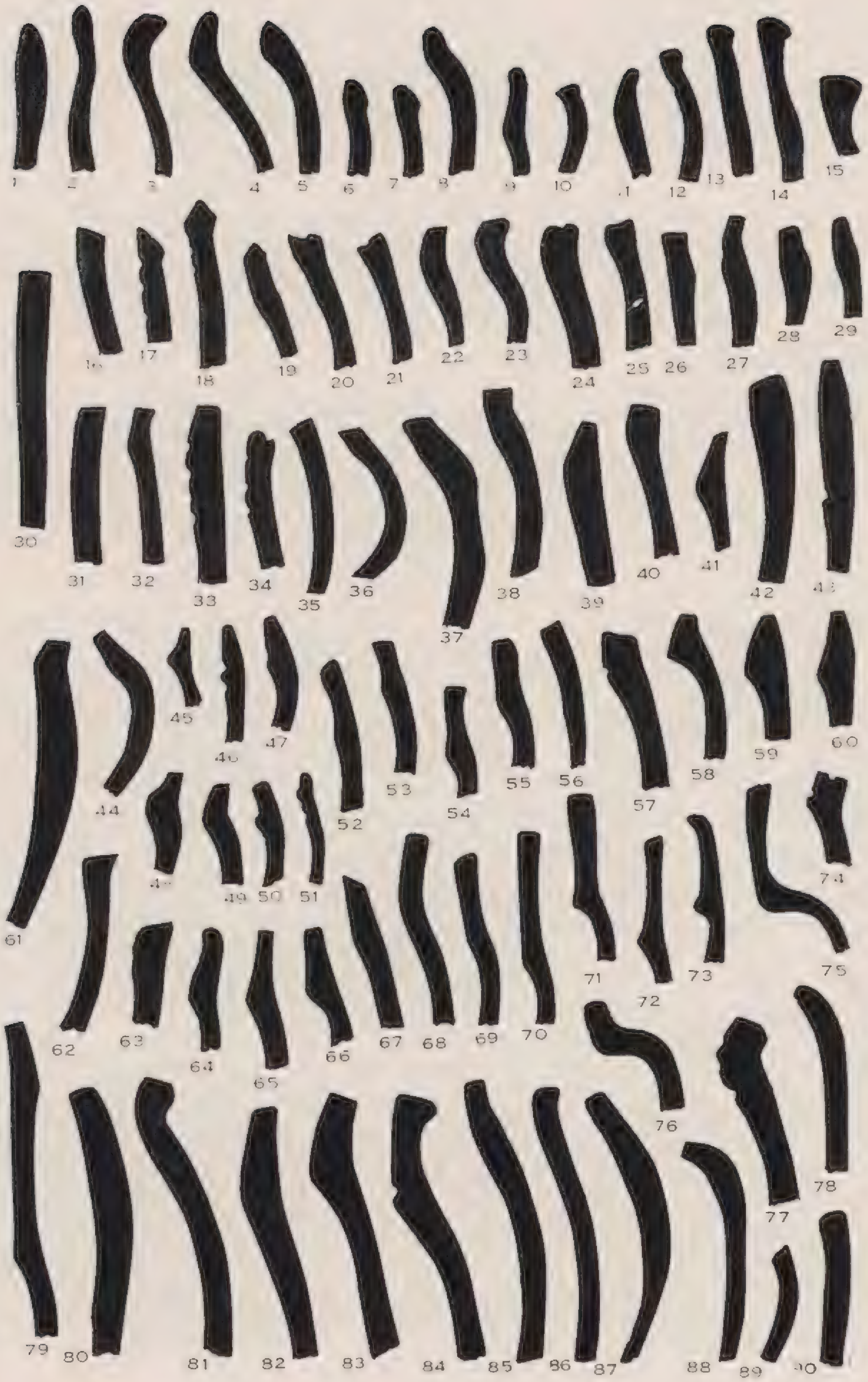
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Plate XIII

Tools Used by Men

(½ natural size)

Figure 1. Chisel-like tool of shale. From trench 6. Cat. No. VIII-F-24618.

Figure 2. Chisel-like tool of hornblende schist. From trench 7. Cat. No. VIII-F-24675*c*.

Figure 3. Adze made of hornblende schist. From general digging. Cat. No. VIII-F-8798.

Figure 4. Tool made from micaceous schist, and cross-section. From trench 5. Cat. No. VIII-F-24565*a*.

Figure 5. Sharp-edged tool made of black slate, and cross-section. From trench 9. Cat. No. VIII-F-24942.

Figure 6. Notched arrowpoint chipped from grey chert, used as a drill point. From trench 3. Cat. No. VIII-F-24370*j*.

Figure 7. Point for drill chipped from chert. From trench 3. Cat. No. VIII-F-24378*g*.

Figure 8. Chert point for drill (?). From trench 9. Cat. No. VIII-F-24933*i*.

Figure 9. Crude chert drill point. From trench 9. Cat. No. VIII-F-24953*b*.

Figure 10. Tip of slender chert drill point. From trench 3. Cat. No. VIII-F-24378*h*.

Figure 11. Crude chert drill. From trench 2. Cat. No. VIII-F-24298.

Figure 12. Chert drill (?). From trench 3. Cat. No. VIII-F-24369*a*.

Figure 13. Chert chip side scraper. From trench 9. Cat. No. VIII-F-24932*d*.

Figures 14, 15. Chert chip side scrapers. From trench 7. Cat. Nos. VIII-F-24679*b*, *a*.

Figures 16, 17, 18. Chipping tools of antler. From trench 8. Cat. Nos. VIII-F-24830*a*, *b*, *c*.

Figure 19. Antler chisel-like object. From trench 3. Cat. No. VIII-F-24377.

Figure 20. Hammerstone. From trench 7. Cat. No. VIII-F-24709*c*.

Figure 21. Grooved rubbing stone. From trench 7. Cat. No. VIII-F-24682.

Figure 22. Pitted stone or anvil, also notched for net sinker. From trench 8. Cat. No. VIII-F-24827.

PLATE XIII

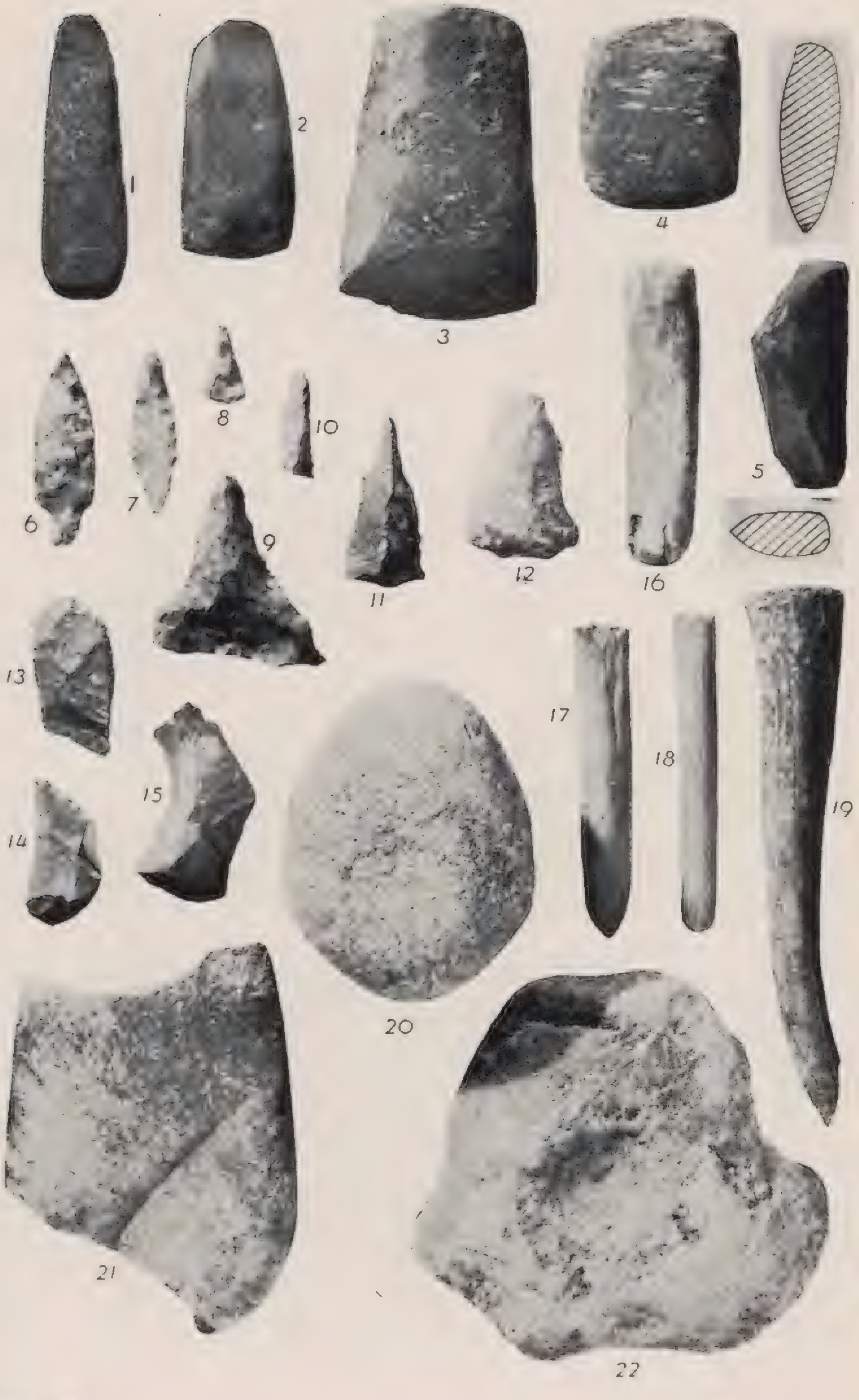

PLATE XIV

Tools Used by Women

(½ natural size)

Figure 1. Left valve of freshwater clam, used as scraper. From trench 7. Cat. No. VIII-F-24723*b*.

Figure 2. Left valve of freshwater clam, probably used as a pottery former. From trench 8. Cat. No. VIII-F-24832.

Figure 3. Small end scraper chipped from grey chert. From trench 7. Cat. No. VIII-F-24710*c*.

Figure 4. Thick end scraper chipped from grey chert. From trench 7. Cat. No. VIII-F-24710*e*.

Figure 5. End scraper chipped from grey chert. From trench 4. Cat. No. VIII-F-24561.

Figure 6. End scraper chipped from grey chert. From trench 7. Cat. No. VIII-F-24710*k*.

Figure 7. End scraper chipped from grey chert. From trench 7. Cat. No. VIII-F-24710*a*.

Figure 8. Crude scraper, perhaps reject, chipped from grey chert. From trench 2. Cat. No. VIII-F-24369*b*.

Figure 9. Awl made of splint bone of deer. From trench 7. Cat. No. VIII-F-24714*b*.

Figure 10. Awl made from splanchnic bone of raccoon. From trench 3. Cat. No. VIII-F-24391.

Figure 11. Awl made from splanchnic bone of raccoon. From trench 4. Cat. No. VIII-F-24540*c*.

Figure 12. Awl made from radius of fox. From general digging of site. Cat. No. VIII-F-24981

Figure 13. Bone awl. From general digging of site. Cat. No. VIII-F-8802*i*.

Figure 14. Awl-like object made from ulna of bear. From trench 7. Cat. No. VIII-F-24711.

Figure 15. Awl derived from section of deer metapodial. From trench 5. Cat. No. VIII-F-24568*f*.

Figure 16. Awl made from tibia of squirrel. From trench 7. Cat. No. VIII-F-24714*j*.

Figure 17. Awl made from section of bird radius. From trench 3. Cat. No. VIII-F-24384*z*.

Figure 18. Antler awl-like object. From trench 9. Cat. No. VIII-F-24955.

Figure 19. Awl made from tarso-metatarsus of wild turkey. From trench 7. Cat. No. VIII-F-24714*a*.

Figure 20. Smoothly finished bone awl. From trench 7. Cat. No. VIII-F-24713*d*.

Figure 21. Awl made from part of deer metapodial. From trench 7. Cat. No. VIII-F-24713*a*.

Figure 22. Awl made from ulna of lynx. From trench 3. Cat. No. VIII-F-24390.

Figure 23. Decorated bone awl. From trench 8. Cat. No. VIII-F-24835*b*.

Figure 24. Decorated (?) bone awl. From trench 7. Cat. No. VIII-F-24714*g*.

Figure 25. Decorated bone awl. From trench 8. Cat. No. VIII-F-24835*e*.

Figure 26. Decorated bone awl. From general digging. Cat. No. VIII-F-8866.

Figure 27. Grooved bone pin. From general digging. Cat. No. VIII-F-8805.

Figure 28. Fragment of decorated bone awl. From trench 3. Cat. No. VIII-F-24385*c*.

Figure 29. Fragment of decorated bone awl. From trench 4. Cat. No. VIII-F-24543.

Figure 30. Smoothly finished cylindrical bone awl. From trench 3. Cat. No. VIII-F-24387.

Figure 31. Decorated bone awl. From trench 8. Cat. No. VIII-F-24835*a*.

Figure 32. Decorated bone awl. From general digging. Cat. No. VIII-F-8806.

Figure 33. Bone netting-needle. From trench 8. Cat. No. VIII-F-24836*a*.

Figure 34. Bone netting-needle. From trench 8. Cat. No. VIII-F-24836*c*.

PLATE XIV

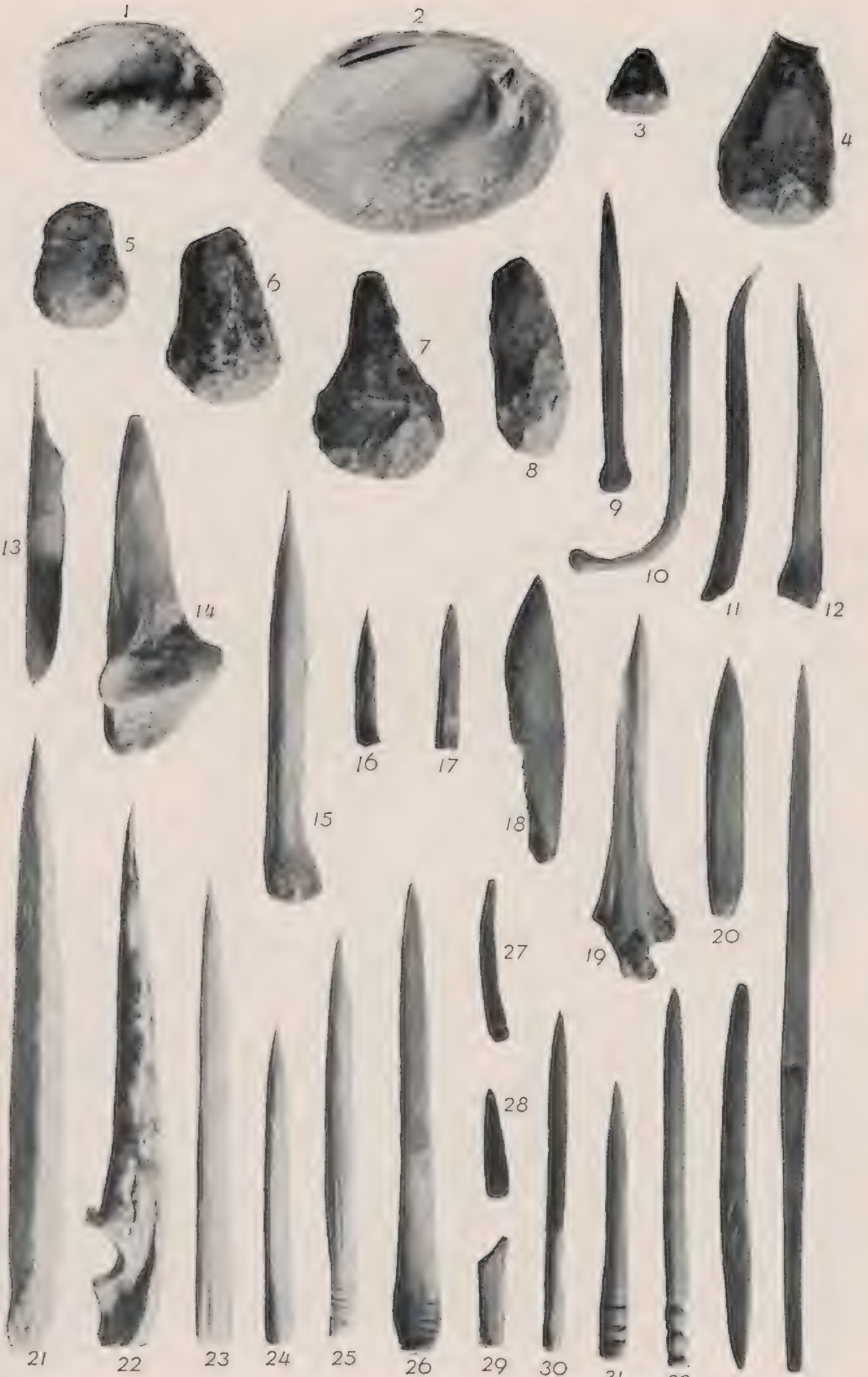
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Plate XV

Articles of Adornment, and Games, and Miscellaneous

(½ natural size)

Figure 1. Oval shale pebble pendant. From trench 8. Cat. No. VIII-F-24839.

Figure 2. Unfinished pendant made of a shale pebble. From trench 3. Cat. No. VIII-F-24395*a*.

Figure 3. Pendant (?) made of shale pebble. From trench 8. Cat. No. VIII-F-24837.

Figure 4. Pebble pendant or amulet. From trench 3. Cat. No. VIII-F-24409.

Figure 5. Bear canine pendant. From trench 3. Cat. No. VIII-F-24396.

Figure 6. Bead made from section of bear canine. From general digging. Cat. No. VIII-F-8815.

Figure 7. Bead made from shell of *Pleurocera acutum*. From trench 7. Cat. No. VIII-F-24722*c*.

Figure 8. Bead made from shell of *Campeloma decisum*. From general digging. Cat. No. VIII-F-24984.

Figure 9. Bone bead. From general digging. Cat. No. VIII-F-24985*e*.

Figure 10. Bone bead. From trench 3. Cat. No. VIII-F-24397*f*.

Figure 11. Polished bone bead. From trench 8. Cat. No. VIII-F-24841*j*.

Figure 12. Bone bead. From trench 3. Cat. No. VIII-F-24397*g*.

Figure 13. Bone bead. From trench 8. Cat. No. VIII-F-24841*a*.

Figure 14. Earthenware object, possibly unfinished bead. From trench 5. Cat. No. VIII-F-24572*a*.

Figures 15, 16, 17. Possible units for cup-and-pin games. From trench 3. Cat. Nos. VIII-F 24404*f* and *n*, and VIII-F-24402*x*.

Figure 18. Decorated unit possibly for cup-and-pin game. From trench 3. Cat. No. VIII-F-24404*a*.

Figure 19. Potsherd disk. From trench 3. Cat. No. VIII-F-24407.

Figure 20. Unfinished potsherd disk. From general digging. Cat. No. VIII-F-24987*a*.

Figure 21. Fragment of unfinished, perforated potsherd disk. From trench 7. Cat. No. VIII-F-24731*a*.

Figure 22. Unfinished potsherd disk with beginning of hole. From trench 9. Cat. No. VIII-F-24941.

Figure 23. Two fragments of decorated armlet made of antler. From trench 7. Cat. No. VIII-F-24718*a*, *b*.

Figure 24. Fragment of decorated antler armlet. From trench 4. Cat. No. VIII-F-24568*c*.

Figure 25. Fragment of decorated antler armlet. From trench 5. Cat. No. VIII-F-24541.

Figure 26. Fragment of bone armlet. From trench 7. Cat. No. VIII-F-24718*c*.

Figures 27, 28. Two flute-like bone objects. From trench 8. Cat. Nos. VIII-F-24843*b* and *c*.

Figure 29. Flute-like bone object. From trench 3. Cat. No. VIII-F-24410.

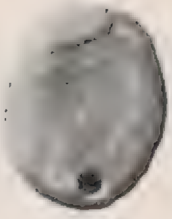
Figure 30. Flute-like bone object. From trench 8. Cat. No. VIII-F-24843*a*.

Figure 31. Flute-like object made from tibia. From trench 7. Cat. No. VIII-F-24730.

Figure 32. Flute-like object made from tibia; unfinished. From general digging. Cat. No. VIII-F-24990*b*.

Figure 33. Fragment of tubular object made of antler. From trench 9. Cat. No. VIII-F-24962.

PLATE XV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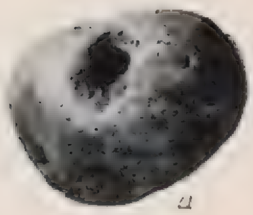
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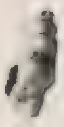
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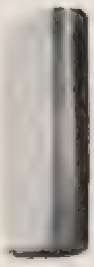
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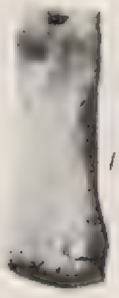
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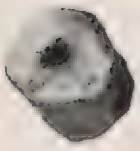
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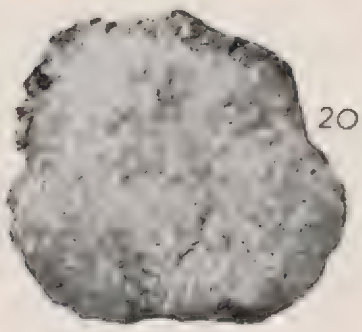
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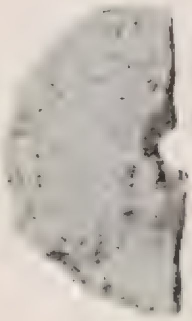
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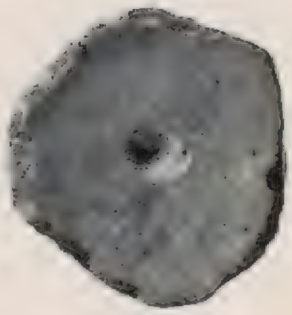
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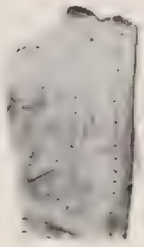
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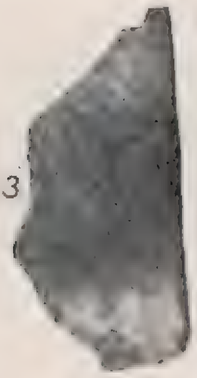
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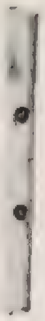
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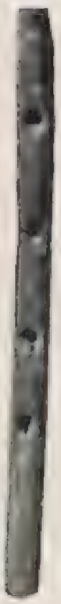
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PLATE XVI

Stone and Earthenware Pipes

($\frac{1}{2}$ natural size)

Figure 1. Bowl of modified monitor pipe made of serpentine (?). From general digging. Cat. No. VIII-F-8874.

Figure 2. Fragment of bowl of limestone pipe. From trench 4. Cat. No. VIII-F-24550.

Figure 3. Decorated stem of earthenware pipe. From trench 5. Cat. No. VIII-F-24588*a*.

Figure 4. Decorated stem of earthenware pipe. From trench 3. Cat. No. VIII-F-24412*e*.

Figure 5. Toy monitor type of pipe of earthenware and drawing showing possible shape. From general digging. Cat. No. VIII-F-8873.

Figure 6. Decorated earthenware pipe. From trench 7. Cat. No. VIII-F-24689*f*.

Figure 7. Plain earthenware pipe. From trench 7. Cat. No. VIII-F-24689*b*.

Figure 8. Plain earthenware pipe; probably Woodland. From trench 8. Cat. No. VIII-F-24848*b*.

Figure 9. Decorated earthenware pipe. From trench 7. Cat. No. VIII-F-24689*e*.

Figure 10. Decorated bowl of earthenware pipe. From trench 8. Cat. No. VIII-F-24846*k*.

Figure 11. Plain earthenware pipe. From trench 7. Cat. No. VIII-F-24689*a*.

Figure 12. Fragment of decorated pipe bowl. From trench 3. Cat. No. VIII-F-24422*g*.

Figure 13. Plain bowl of earthenware pipe. From trench 7. Cat. No. VIII-F-24688*v*.

Figure 14. Fragment of decorated bowl of earthenware pipe. From trench 7. Cat. No. VIII-F-24692*q*.

Figure 15. Fragment of decorated bowl of earthenware pipe. From trench 9. Cat. No. VIII-F-24965*c*.

Figure 16. Decorated bowl of earthenware pipe. From trench 7. Cat. No. VIII-F-24692*e*.

Figure 17. Fragment of decorated bowl of earthenware pipe. From trench 9. Cat. No. VIII-F-24965*a*.

Figure 18. Decorated bowl of earthenware pipe. From trench 7. Cat. No. VIII-F-24692*f*.

Figure 19. Decorated bowl of earthenware pipe. From general digging. Cat. No. VIII-F-8872*a*.

Figure 20. Fragment of decorated bowl of earthenware pipe. From trench 7. Cat. No. VIII-F-24693*d*.

Figure 21. Fragment of decorated bowl of earthenware pipe. From trench 8. Cat. No. VIII-F-24846*a*.

Figure 22. Decorated bowl of earthenware pipe. From trench 7. Cat. No. VIII-F-24692*m*.

Figure 23. Fragment of decorated bowl of earthenware pipe. From trench 7. Cat. No. VIII-F-24693*g*.

Figure 24. Fragment of decorated bowl of earthenware pipe. From trench 7. Cat. No. VIII-F-24694*p*.

Figure 25. Decorated earthenware pipe. From trench 7. Cat. No. VIII-F-24692*a*.

PLATE XVI

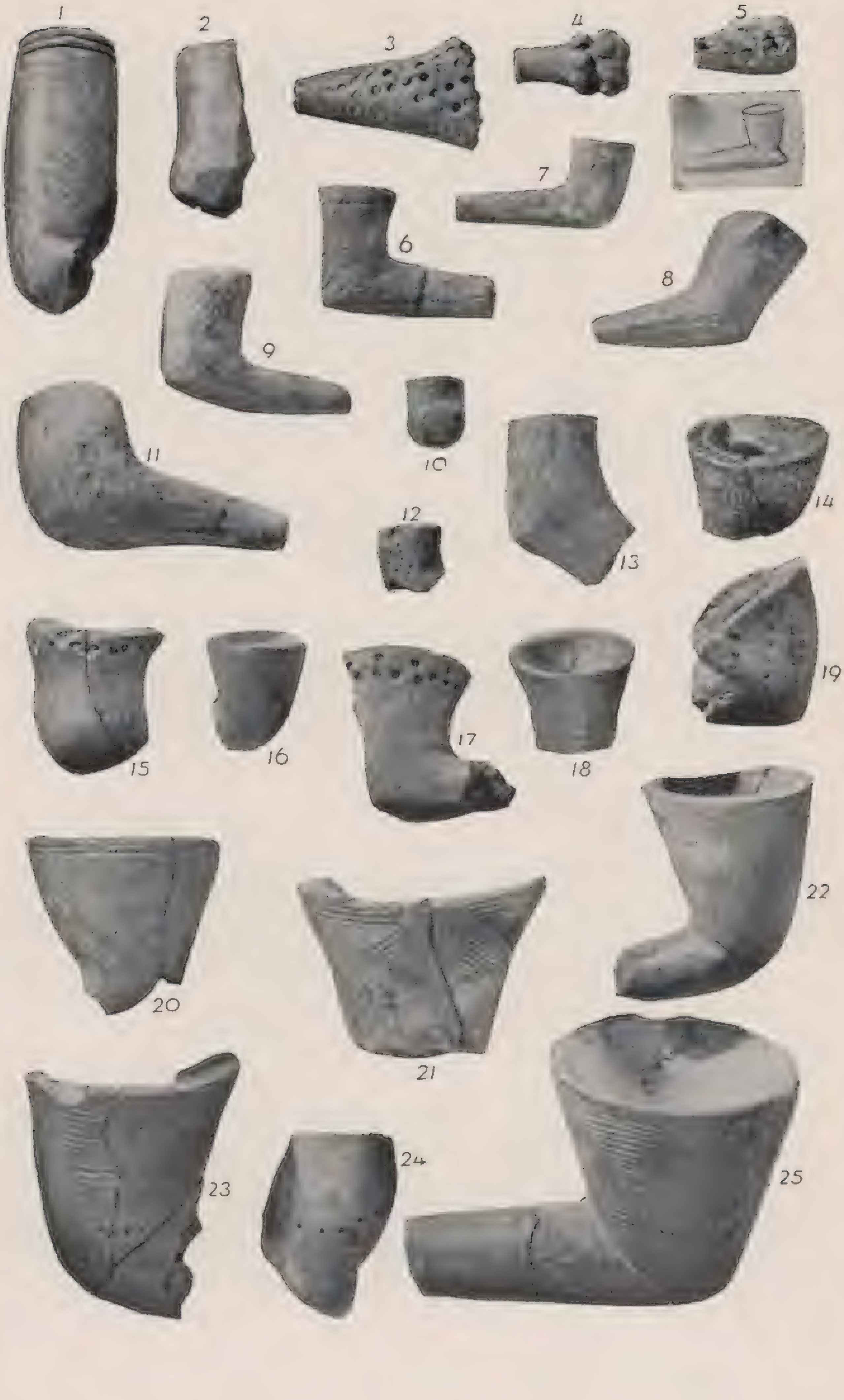


Plate XVII

Earthenware Pipes

(½ natural size)

Figure 1. Fragment of decorated bowl. From trench 7. Cat. No. VIII-F-24694*r*.

Figure 2. Fragment of decorated bowl. From trench 3. Cat. No. VIII-F-24422*l*.

Figure 3. Fragment of decorated bowl. From trench 4. Cat. No. VIII-F-24549*a*.

Figure 4. Fragment of decorated bowl. From trench 3. Cat. No. VIII-F-24422*e*.

Figure 5. Decorated bowl. From trench 5. Cat. No. VIII-F-24586*a*.

Figures 6, 7. Fragments of decorated bowls. From trench 7. Cat. Nos. VIII-F-24694*z* and *y*.

Figure 8. Decorated bowl. From trench 7. Cat. No. VIII-F-24694*a*.

Figures 9, 10. Fragments of decorated bowls. From trench 7. Cat. Nos. VIII-F-24694*b* and *d*.

Figure 11. Fragment of decorated bowl. From trench 3. Cat. No. VIII-F-24423*a*.

Figure 12. Fragment of decorated bowl. From general digging. Cat. No. VIII-F-8824*d*.

Figure 13. Fragment of decorated bowl. From trench 5. Cat. No. VIII-F-24586*e*.

Figure 14. Fragment of decorated bowl. From trench 4. Cat. No. VIII-F-24549*v*.

Figure 15. Fragment of decorated bowl. From trench 8. Cat. No. VIII-F-24846*f*.

Figure 16. Fragment of decorated bowl. From trench 7. Cat. No. VIII-F-24692*c*.

Figure 17. Fragment of decorated bowl. From trench 2. Cat. No. VIII-F-24422*o*.

Figure 18. Fragment of decorated bowl. From general digging. Cat. No. VIII-F-24992.

Figure 19. Human face mask from bowl. From trench 7. Cat. No. VIII-F-24695.

Figure 20. Pipe with plain bowl. From trench 8. Cat. No. VIII-F-24848*a*.

Figure 21. Fragment of decorated bowl. From trench 3. Cat. No. VIII-F-24422*p*.

Figures 22, 23. Fragments of decorated bowls. From general digging. Cat. Nos. VIII-F-8824*b* and *a*.

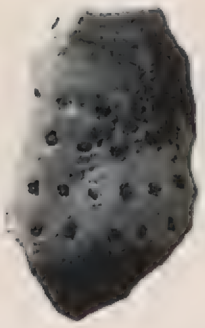
Figure 24. Decorated bowl. From trench 7. Cat. No. VIII-F-24694*m*.

Figure 25. Decorated bowl. From trench 7. Cat. No. VIII-F-24693*j*.

Figure 26. Bowl with lizard form on side. From general digging. Cat. No. VIII-F-8825.

Figure 27. Decorated bowl. From trench 7. Cat. No. VIII-F-24693*a*.

PLATE XVII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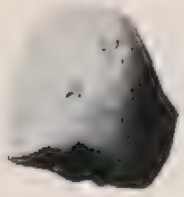
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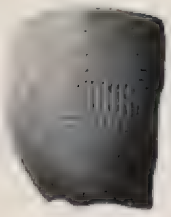
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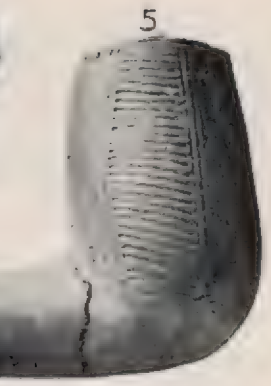
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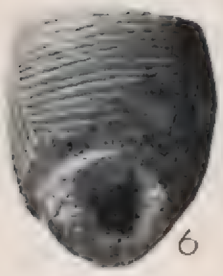
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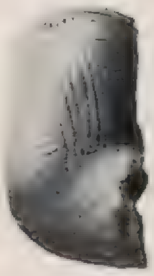
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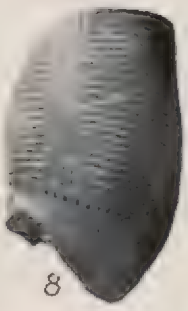
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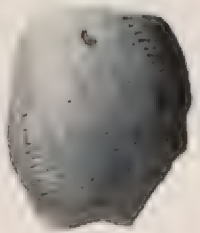
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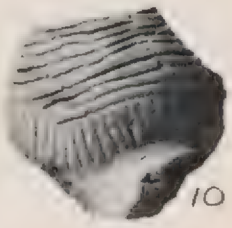
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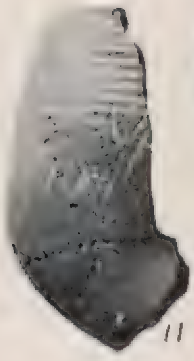
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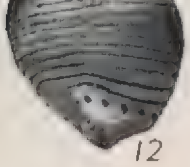
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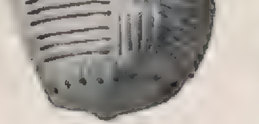
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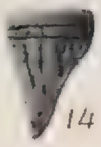
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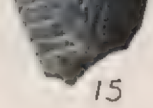
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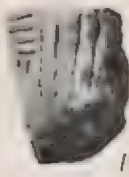
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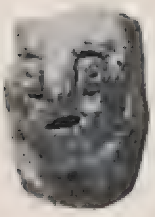
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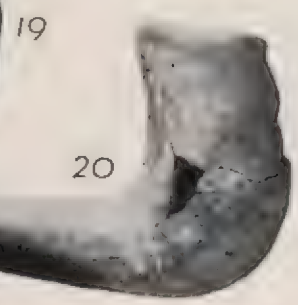
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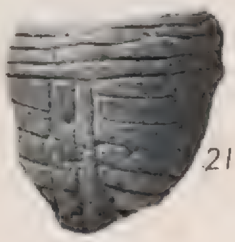
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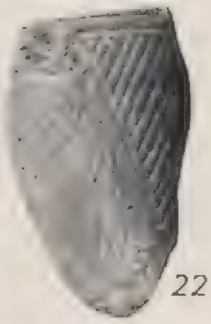
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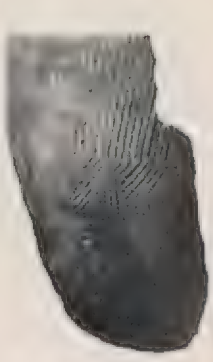
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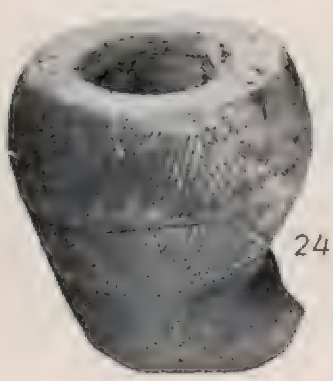
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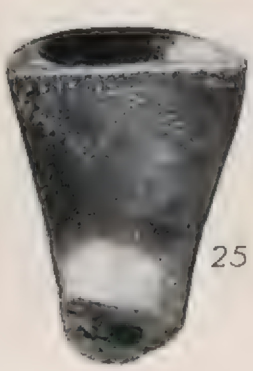
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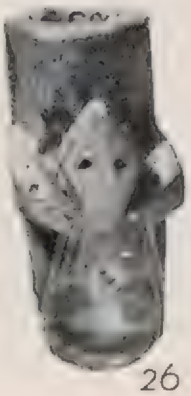
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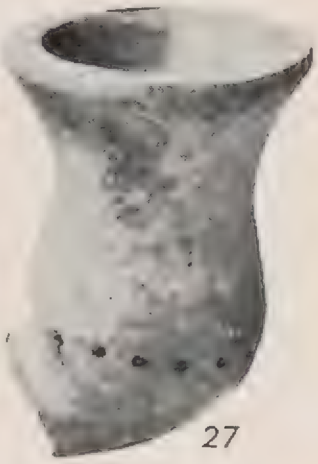
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PLATE XVIII

Miscellaneous Objects and Showing Manufacture

($\frac{1}{2}$ natural size)

Figure 1. Antler object. From trench 3. Cat. No. VIII-F-24431*h*.

Figure 2. Antler tool. From trench 7. Cat. No. VIII-F-24704*d*.

Figure 3. Antler tool. From trench 8. Cat. No. VIII-F-24828*a*.

Figure 4. Mattock-like antler tool. From trench 7. Cat. No. VIII-F-24704*a*.

Figure 5. Fragment antler tool. From trench 7. Cat. No. VIII-F-24704*g*.

Figure 6. Antler tip used as tool. From trench 3. Cat. No. VIII-F-24431*d*.

Figure 7. Section of fossil *(Orthoceras)* notched on one edge. From trench 9. Cat. No. VIII-F-24944.

Figure 8. Left lower jaw of raccoon with longitudinal cutting. From general digging. Cat. No. VIII-F-24996.

Figure 9. Hollowed and perforated object made from proximal phalanx of moose. From trench 7. Cat. No. VIII-F-24697.

Figures 10, 11. Deer metapodials cut in half lengthwise. From trenches 7 and 3. Cat. Nos. VIII-F-24719 and VIII-F-24431.

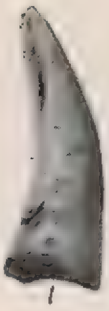
Figure 12. Antler tool perhaps unfinished. From trench 8. Cat. No. VIII-F-24850*a*.

Figures 13, 14. Worked pieces of antler. From trench 3 and general digging. Cat. Nos. VIII-F-24431*f* and VIII-F-8810*d*.

Figure 15. Piece separated from antler beam by grooving and breaking. From trench 3. Cat. No. VIII-F-24431*b*.

Figures 16, 17. Section cut from a dog tibia and a tibia with distal joint cut off. From trench 7. Cat. Nos. VIII-F-24716 and VIII-F-24701.

PLATE XVIII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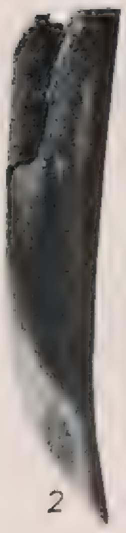
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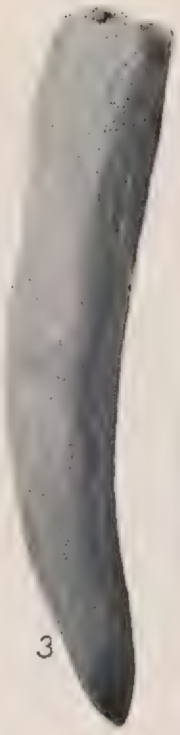
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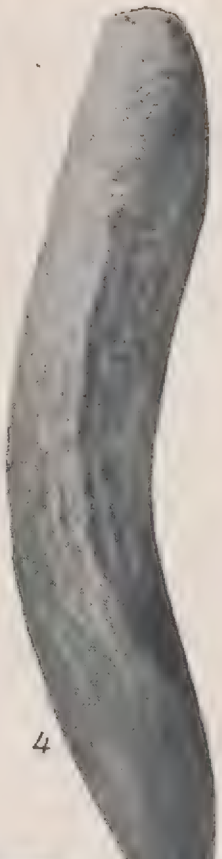
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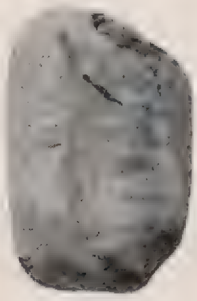
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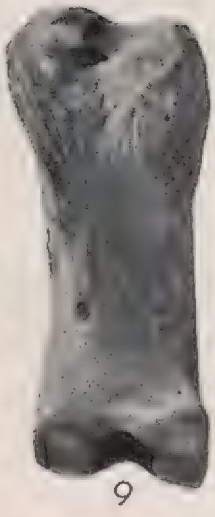
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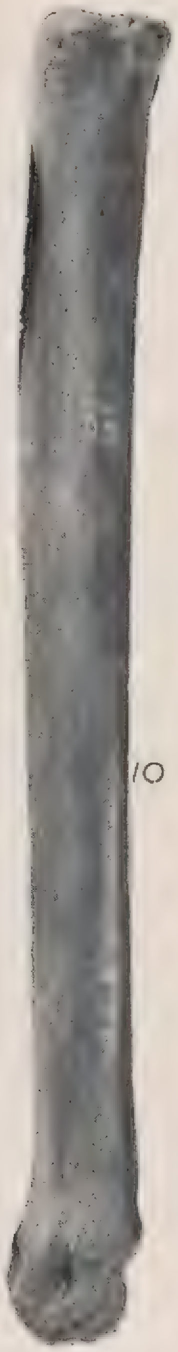
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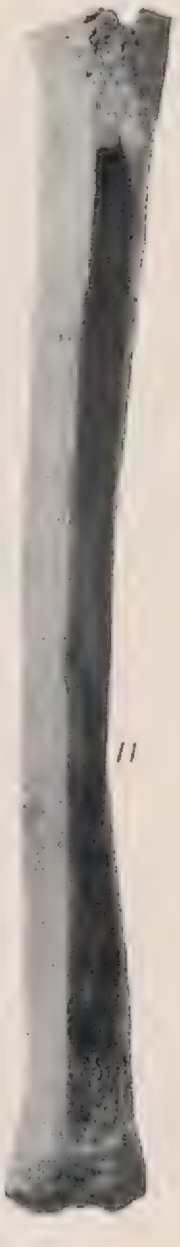
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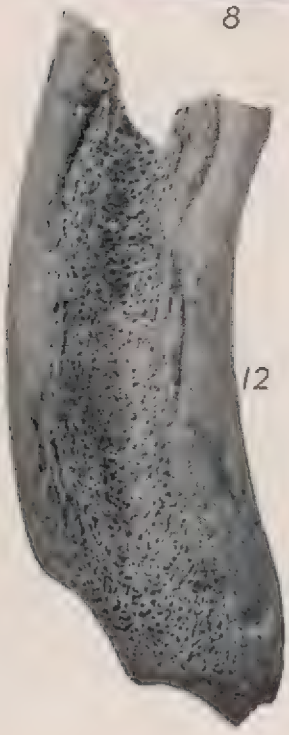
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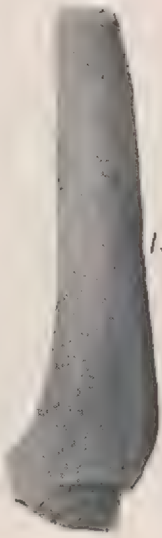
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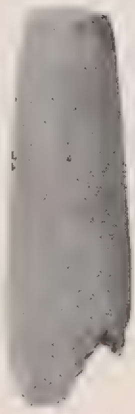
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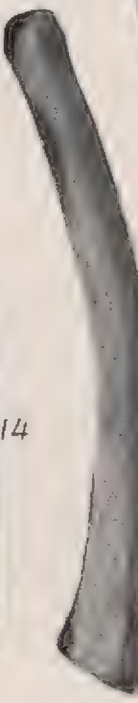
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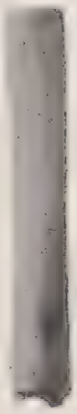
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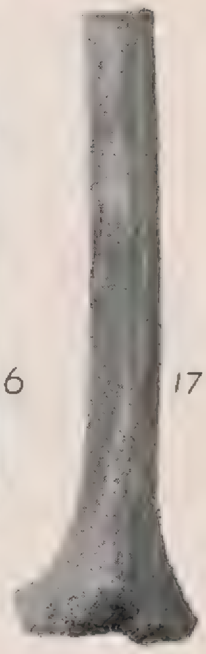
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